

GETTING STARTED

PACE Suite 4.5



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1 Introduction

1.1 About This Document

The Getting Started document describes how to perform common application packaging tasks with the help of PACE Suite.




1.2 Glossary

MSI	MSI is an installer package file format used by Windows. Its name comes from the program's original title, Microsoft Installer, which has changed to Windows Installer. MSI files are used for installation, storage, and removal of programs.
MST	MST is a settings file used by Microsoft Windows Installer, a component of the Windows operating system that enables software installations. It contains software configuration options, allows custom parameters for the installation.
APPV	Microsoft Application Virtualization (also known as App-V; formerly Softricity SoftGrid) is an application virtualization and application streaming solution from Microsoft.
APPX	APPX is the file format used to distribute and install Universal Windows Platform (UWP) apps on Windows 8.x and 10, Windows Phone 8.1, Windows 10 Mobile, Xbox One, HoloLens, and Windows 10 IoT Core.



2 PACE Overview

PACE Suite consists of the following components:

Tool name	Major functions
 MSI GENERATOR	<ul style="list-style-type: none">• Repackage any existing installation into Windows Installer (MSI), UWP app package (APPX) or a virtualization format (Microsoft App-V 5.x, and VMware ThinApp).• Auto-detection of embedded installers.• Create a response transform• Tune any existing Windows Installer package by applying your settings and saving them as a Windows Installer transform (MST).• Include the excluded files/registry back to a package.
 MSI EDITOR	<ul style="list-style-type: none">• Manage the contents of an MSI in a tree view• Import the desired resources• Manage Custom Actions• Integrate Device Drivers• Use a smart and advanced MSI database editor, with formatted string autocompleting, Excel-like formula bar, row reference tracking, and more.• Create patches (MSP)• Manage permission settings for file system and registry• Handle upgrades easily – just let MSI Editor know which MSI you want to be upgraded at runtime.• Publish your applications to Microsoft SCCM 2007, 2012, 2016.• See the estimated complexity of an app right away.• Generate package documentation containing the details about your package and configuration.• Undo-redo any manipulation and see the changes highlighted in the MSI tables
 DOCU GENERATOR	<ul style="list-style-type: none">• Automatically record your on-screen actions into a nice-looking document with screenshots and annotations

2.1 Installation & System Requirements

2.1.1 Software Prerequisites

Ensure that a target system contains necessary software prerequisites:

OS	Windows 10/8.1/8/7 SP1, Windows Server 2012/2008 R2 SP1
	NOTE Building Universal Windows Platform app packages (APPX) is available under Windows 10 or Windows Server 2016 or newer.
Middleware	Microsoft .NET Framework 4.6.1 (https://www.microsoft.com/en-us/download/details.aspx?id=49981) or higher.
	NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed. NOTE For publishing MSI packages to Microsoft SCCM 2007 (SP1/SP2/R1/R2) or SCCM 2012 (SP1/SP2/R2/R2 SP1) server, ensure that your system contains Microsoft Management Framework 3.0 and Windows Remote Management (WinRM) service enabled.
Privileges	Administrative privileges on the system.

2.1.2 Hardware Prerequisites

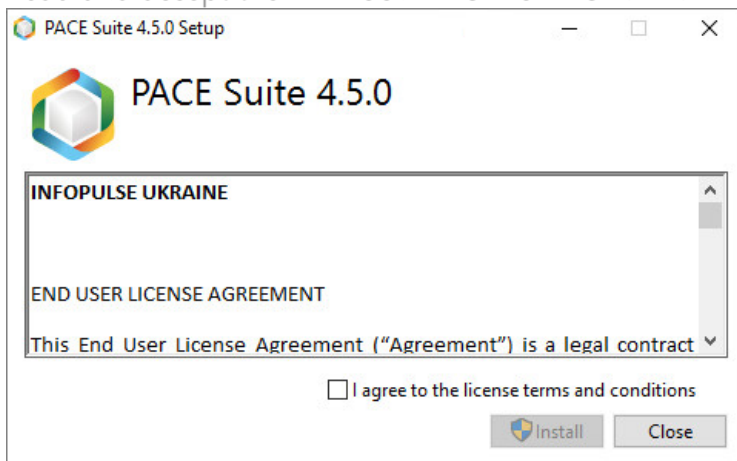
Ensure that a target system fulfils the minimum hardware conditions:

Processor	32-bit (x86) or 64-bit (x64) processor at 2 GHz or greater
	NOTE To repackage 64-bit applications or create 64-bit App-V packages, use PACE Suite on a 64-bit Windows operating system.
RAM	2 GB
Hard drive free space	1 GB NOTE Additional storage is required for your projects and packages and depends on their size and quantity.
Display	1280 x 768 resolution or higher.

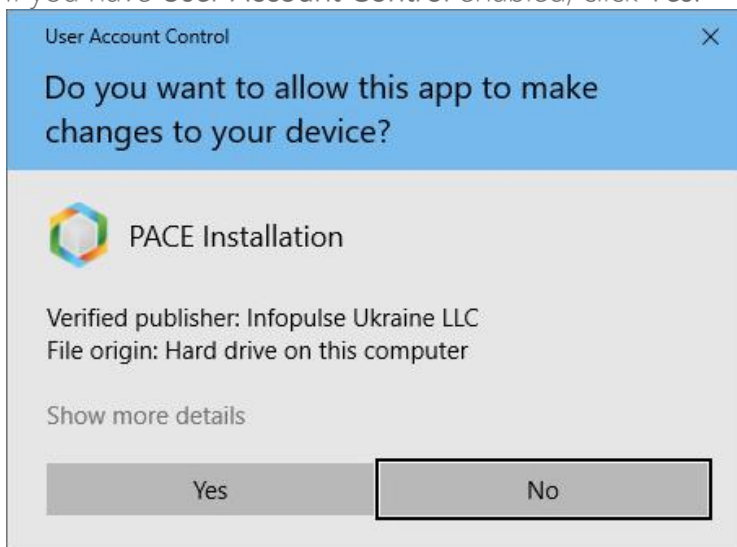
2.1.3 How to Install PACE Suite

PACE Suite installation checks whether your license is compatible with the current PACE Suite version and whether your system meets minimum software requirements. Note that the installation requires the administrator privileges.

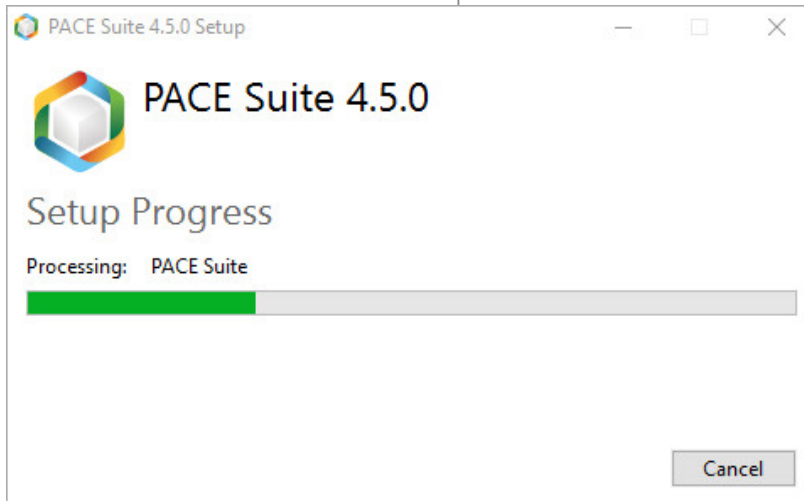
- [1]. Run the downloaded PACE Suite installer.
- [2]. Read and accept the END USER LICENSE AGREEMENT and then click Install.



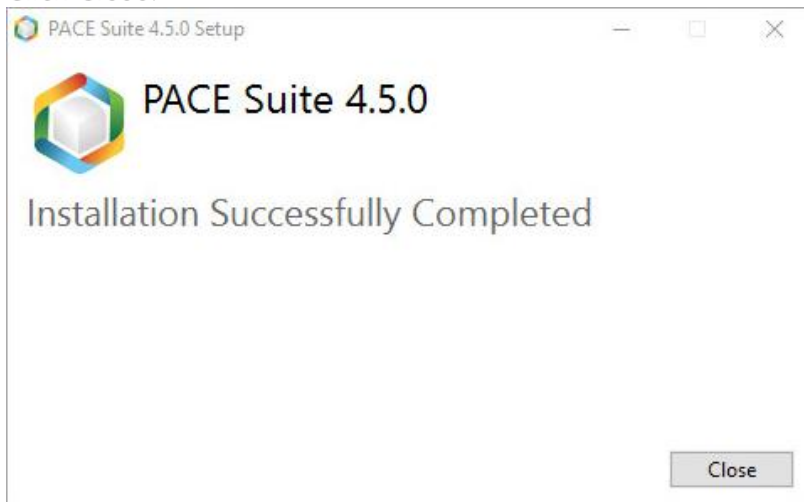
- [3]. If you have User Account Control enabled, click Yes.



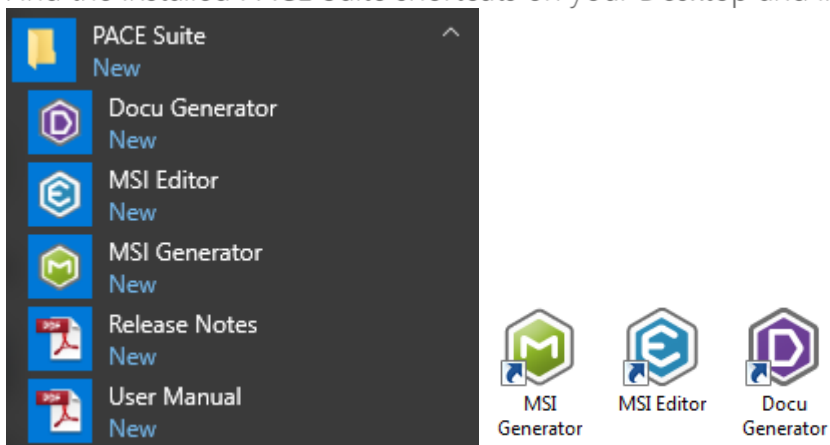
- [4]. Wait until the installation has completed.



- [5]. Click Close.



- [6]. Find the installed PACE Suite shortcuts on your Desktop and in the Start Menu.



3 How-To Manuals

We regularly publish PACE Suite educational videos on YouTube. Please subscribe to our [channel](#).

3.1 New MSI

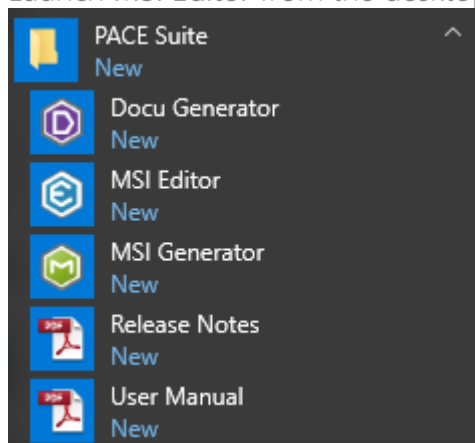
Choose a scenario that better suits your needs:

- **Create Blank MSI**, described in section 3.1.1
Create a new empty MSI database in MSI Editor, add folders, files, registry entries and shortcuts directly to the MSI package.
- **Generate MSI from Scratch**, described in section 3.1.2
Create a new empty project in MSI Generator, add folders, files, registry entries and shortcuts to this project and then generate the MSI package from this project.
- **Convert (Repackage) EXE to MSI**, described in section 3.1.3
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.
- **Capture System Changes to MSI**, described in section 3.1.4
Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.

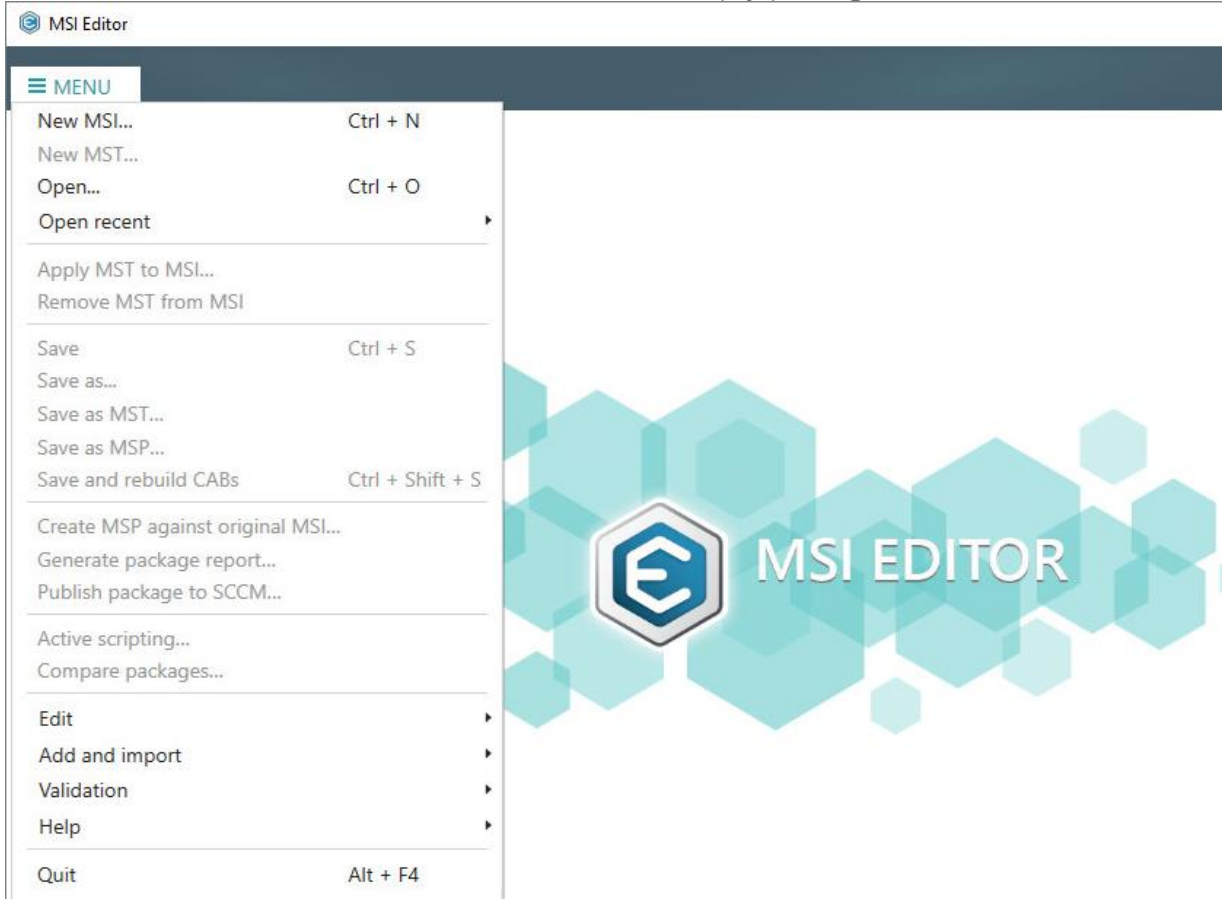
3.1.1 Create Blank MSI

Create a new empty MSI database in MSI Editor, add folders, files, registry entries and shortcuts directly to the MSI package.

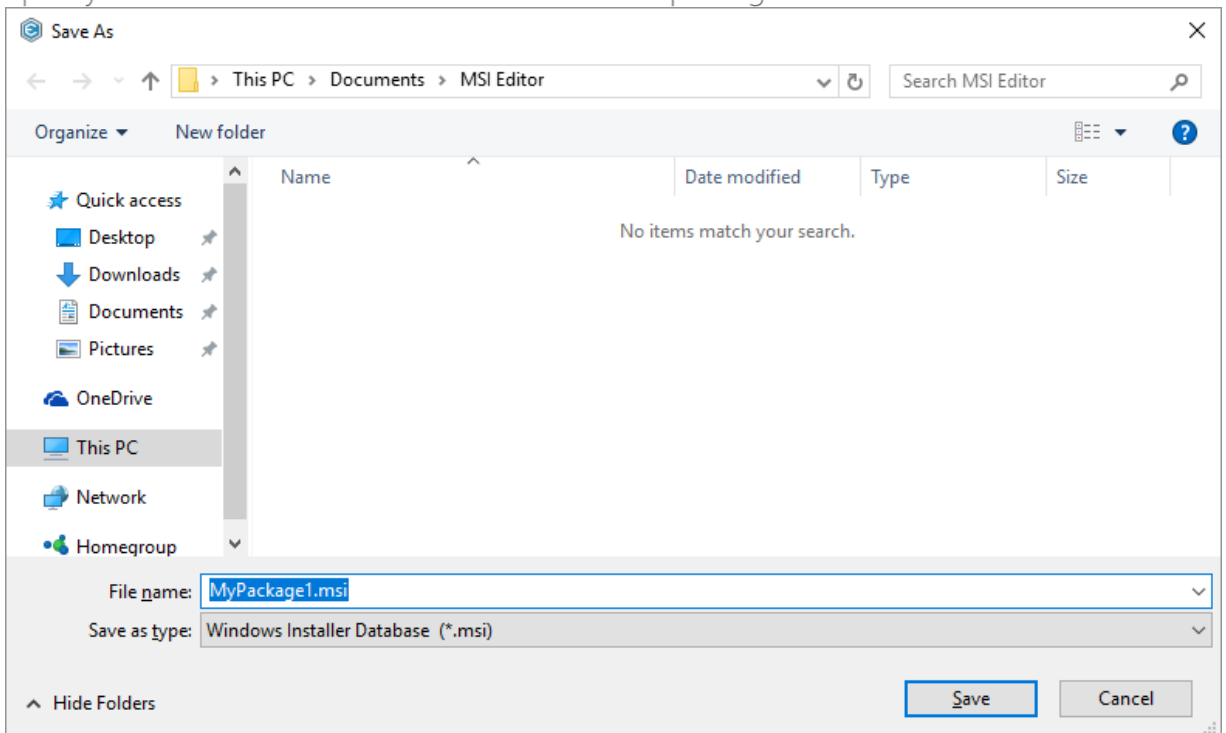
[1]. Launch MSI Editor from the desktop or the start menu shortcut.



- [2]. Select New MSI... from the MENU to create a new empty package.



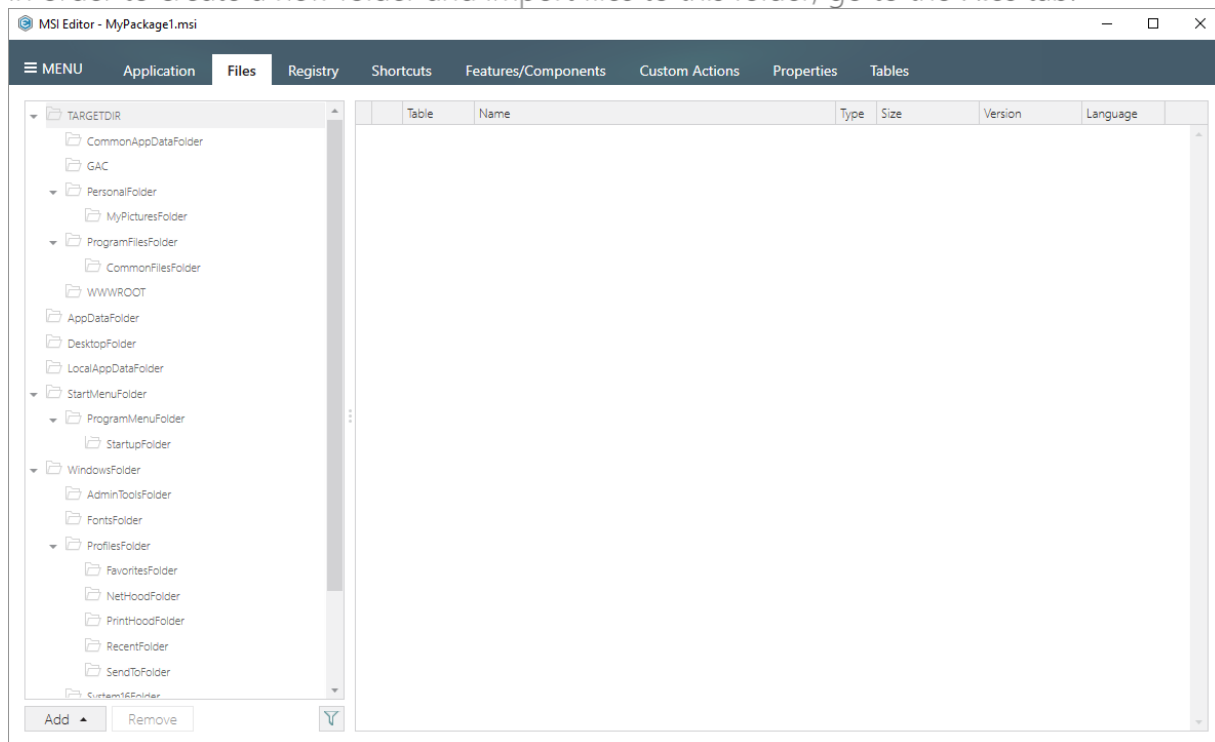
- [3]. Specify a name and a destination location for the package and click Save.



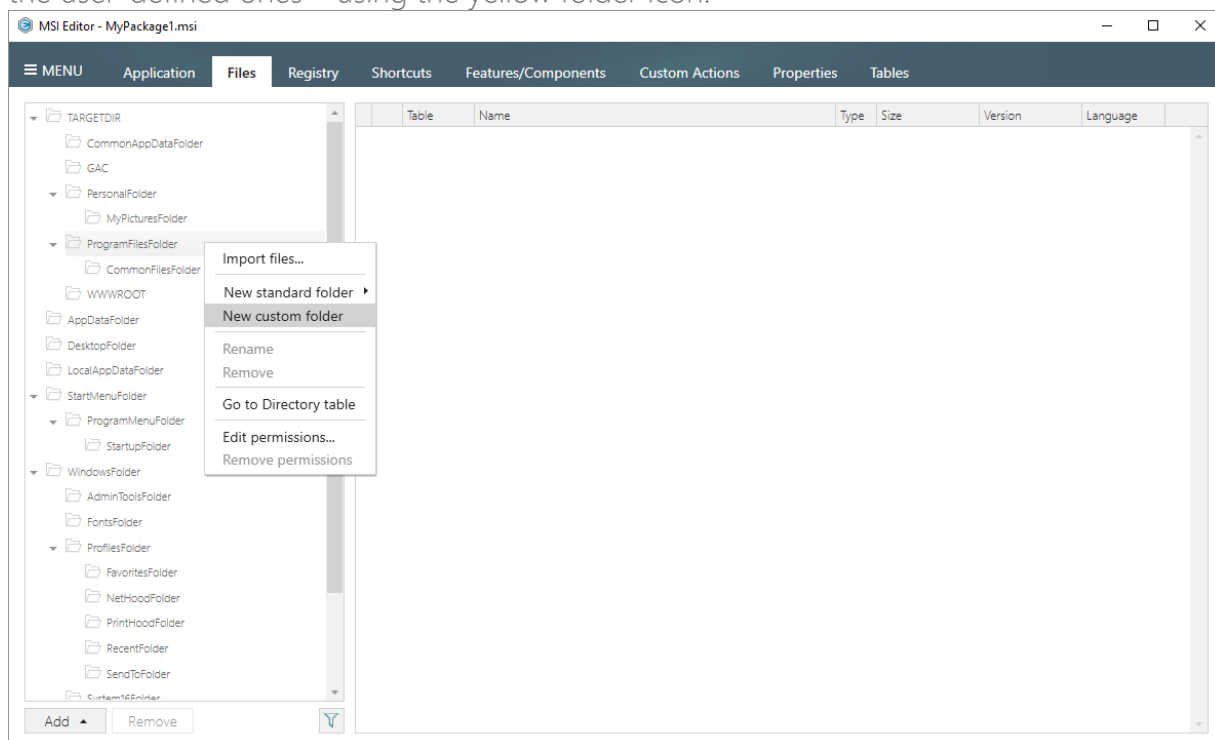
- [4]. Once the newly created package is opened automatically, you can start adding the necessary resources using MSI Editor. The steps from [5] to [13] describe how to create a new folder and import files to this folder; the steps from [14] to [22] describe how to

create a new registry key, value, and import registry entries from the REG files; the steps from [23] to [29] describe how to create a new and import existing shortcuts to the package; and the last step [30] describes how to save all these changes to the MSI package.

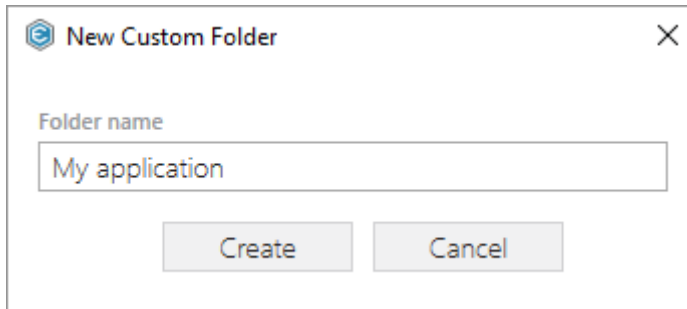
- [5]. In order to create a new folder and import files to this folder, go to the Files tab.



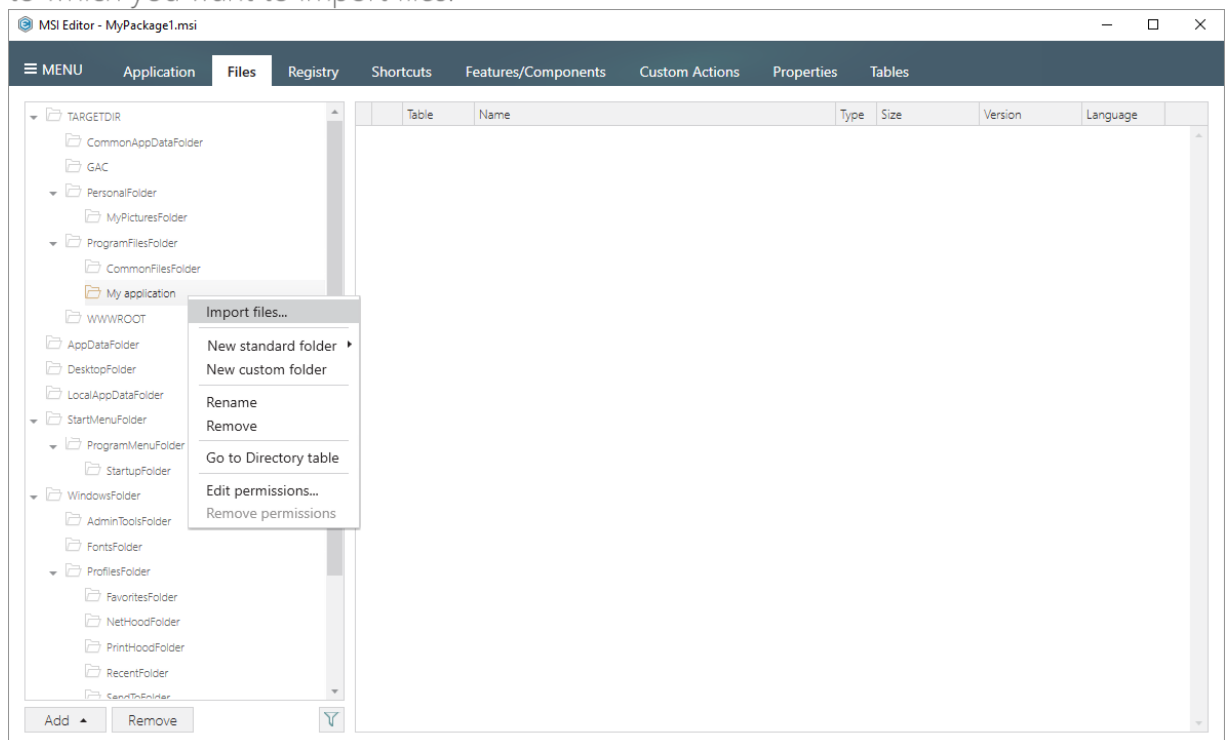
- [6]. Select **New custom folder** from the context menu of a folder, where you want to create a new folder. Note that standard MSI folders are displayed using the grey folder icon and the user-defined ones – using the yellow folder icon.



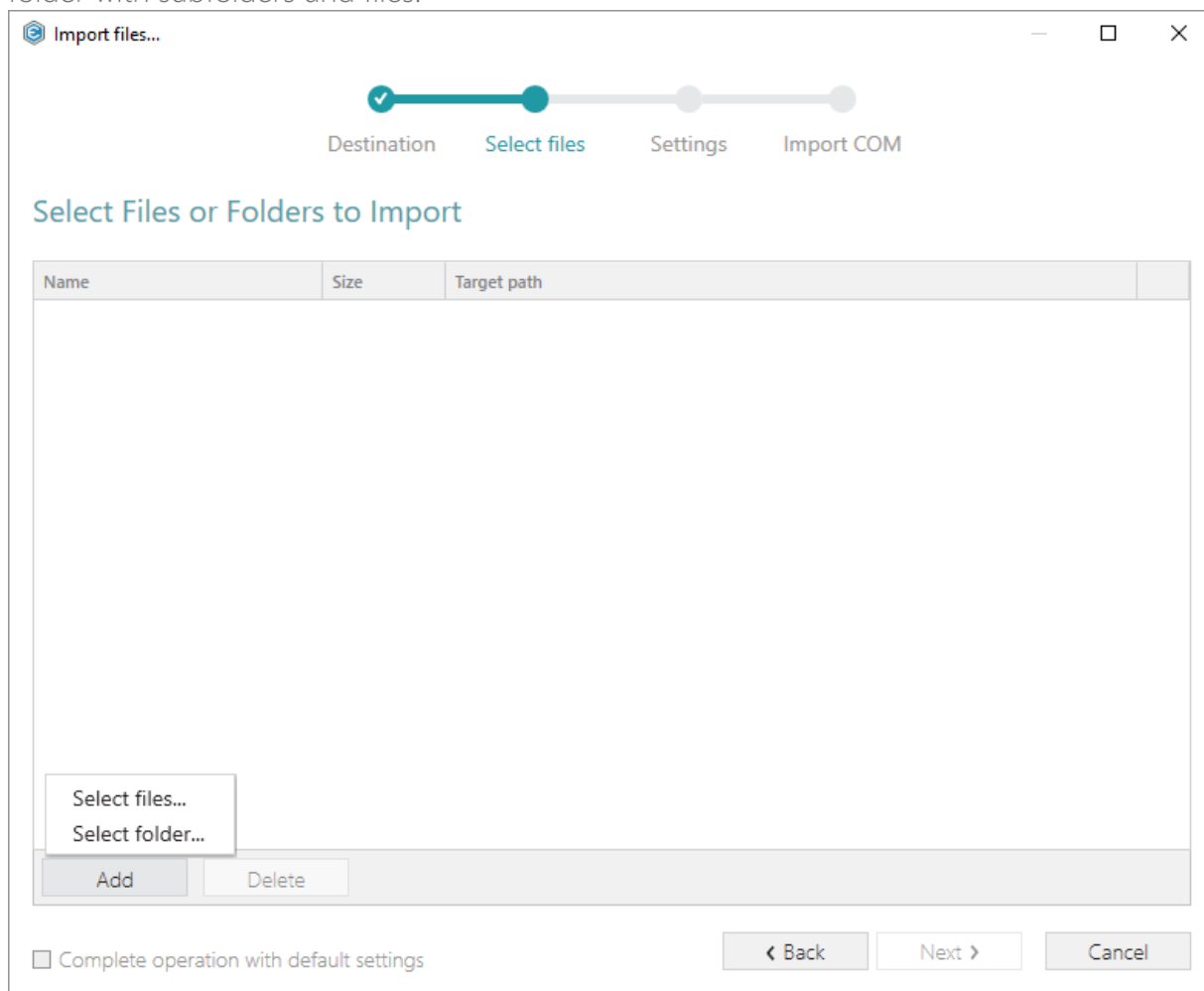
- [7]. Enter a folder name and click Create.



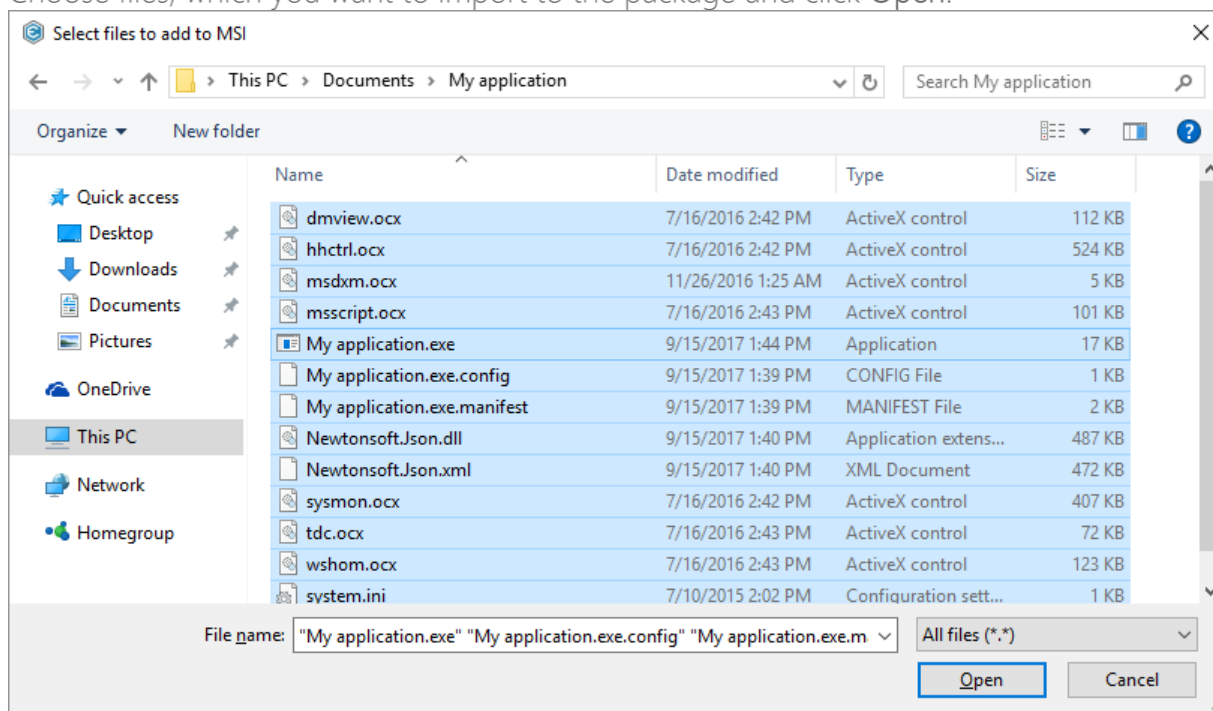
- [8]. For adding files to your package, select Import files... from the context menu of a folder, to which you want to import files.



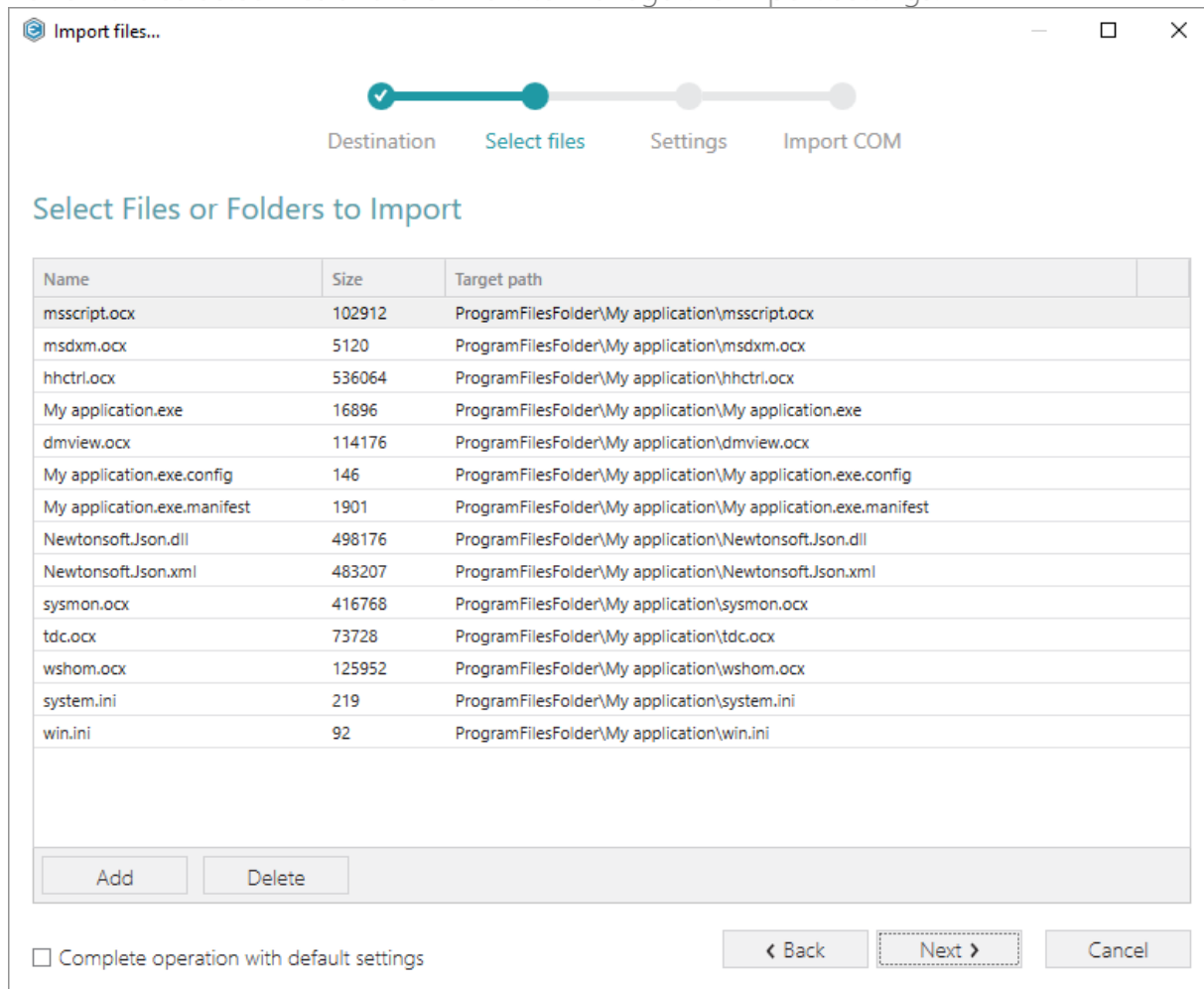
- [9]. Click Add -> Select files... to choose files in a folder or Add -> Add folder... to choose folder with subfolders and files.



- [10]. Choose files, which you want to import to the package and click Open.



[11]. Review the selected files and click **Next** to manage the import settings.



[12]. At this step, you can manage how to save INI files, select an MSI Feature, to which component with files will be assigned and select Compression type for your files. Below, in the tables, you will find the detailed description of these settings. Click **Next** to continue.

Import files...

✓

✓

DestinationSelect filesSettingsImport COM

Settings

Select how to handle INI files

INI files

Install standard INI files via IniFile table; non-standard via File table (recommended)

[Show non-standard INI-files](#)

Select a feature to assign new components to

Feature

<New Feature>

New feature...

☒ Create new feature

Select a compression type for new files

Media type

New CAB file

☐ Complete operation with default settings

< Back

Next >

Cancel

INI files settings

Install standard INI files via IniFile table; non-standard via Files table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data, will be saved to the 'File' table as binary files.

Install all INI files via File table

All INI files will be saved only to the 'File' table as binary files.

Install all INI files via File table and duplicate to IniFile table

All INI files will be saved to both the 'File' and the 'IniFile' tables. This option is used to install INI files with unsupported data keeping their original file structure and update the necessary INI file values.

Feature settings

Create new feature

Either the "PACE_Complete" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-machine locations, or the "PACE_UserPart" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-user locations. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart"

one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

<a feature, selected from the list>

Components with files will be assigned to a feature, selected from the list.

Media type settings

New Cab file

The imported files will be compressed to a new external cabinet (CAB) file. The external cabinet files are always placed next to the MSI package.

Uncompressed

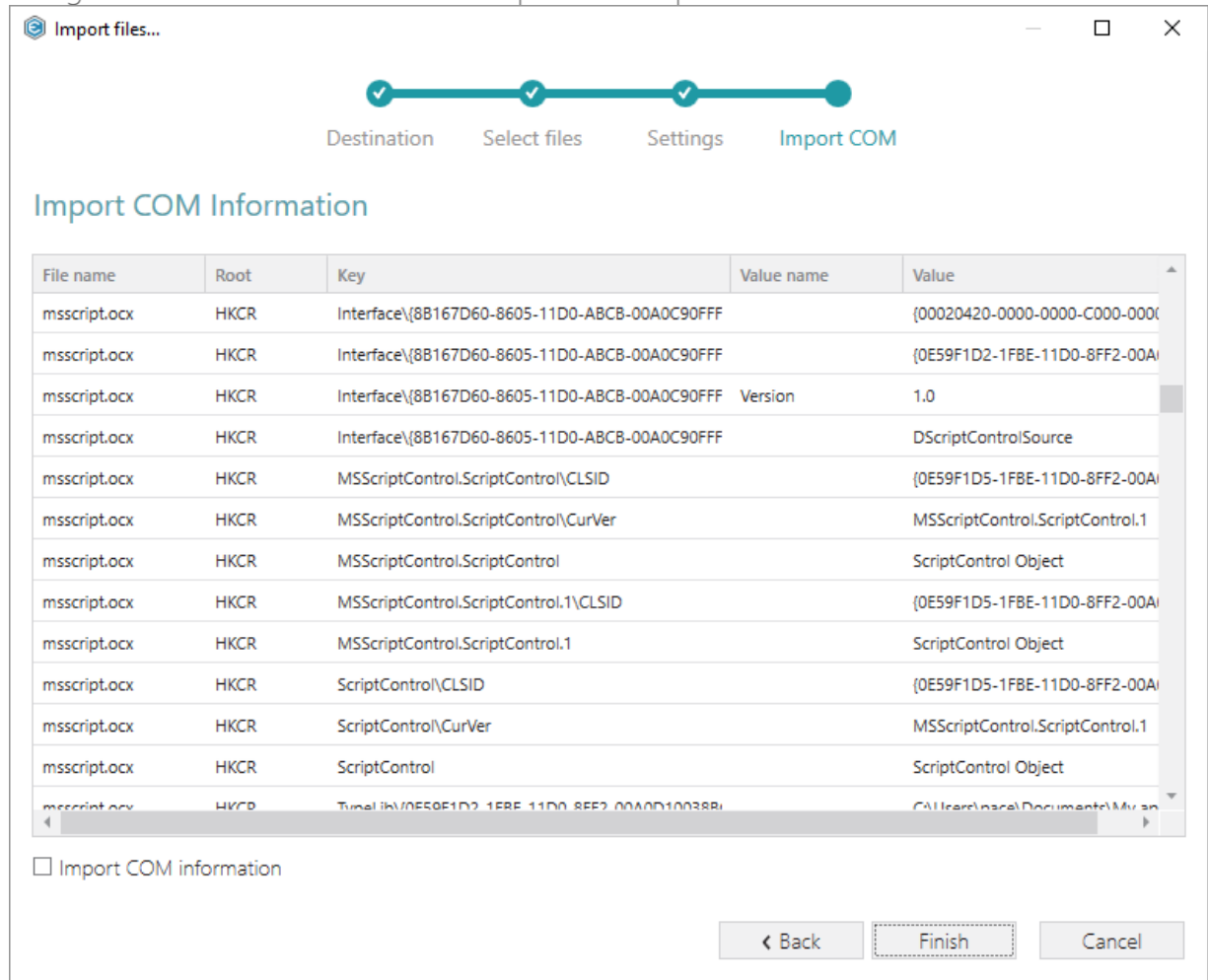
The imported files will be copied to the MSI folder without compression. Note that copied files will be placed to the folder structure accordance to their target paths.

Existing

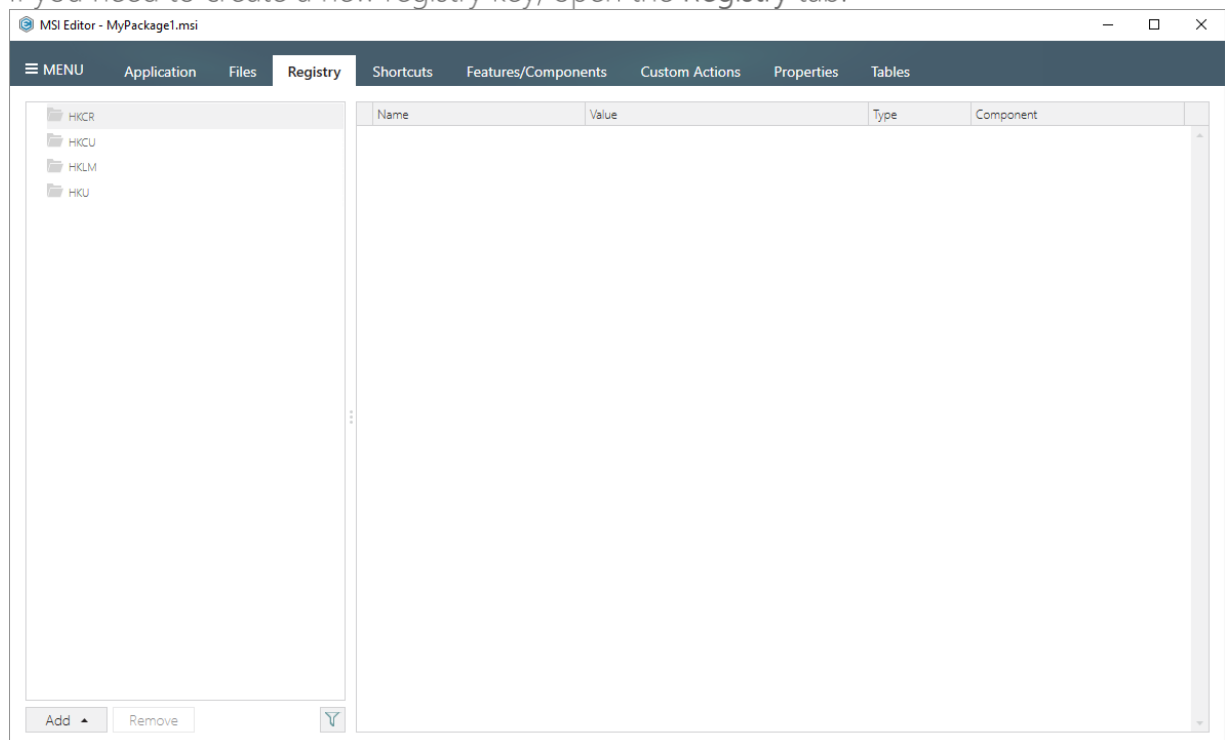
The imported files will be compressed to the existing external cabinet (CAB) file, which was created during the previous file import. Note that this option is visible only if during the current editing session you have already imported files with 'New Cab file' option.

- [13]. Review the COM information, extracted from the selected files, and select the **Import COM information** option to import this registration information into the 'Registry' table.

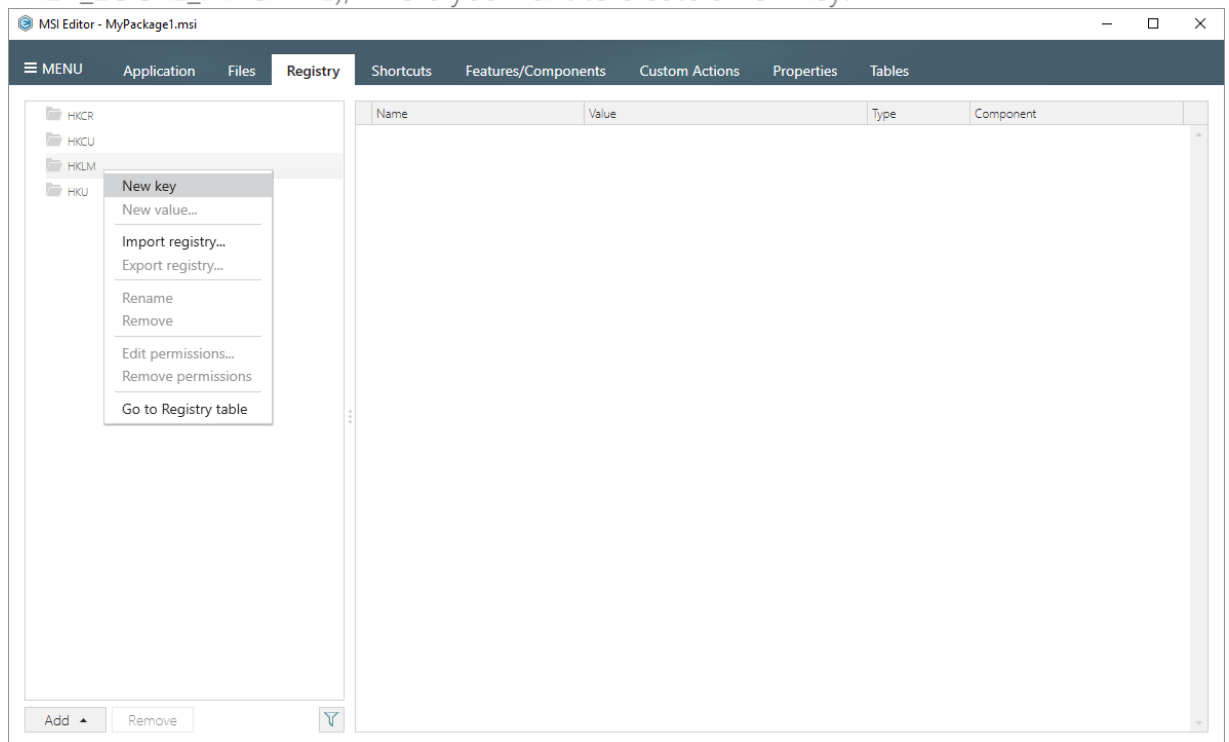
along with the files. Click Finish to complete the import.



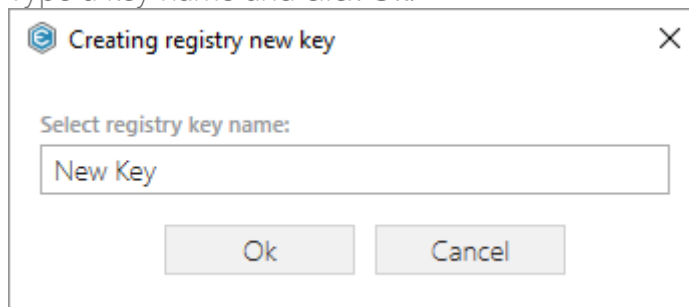
[14]. If you need to create a new registry key, open the Registry tab.



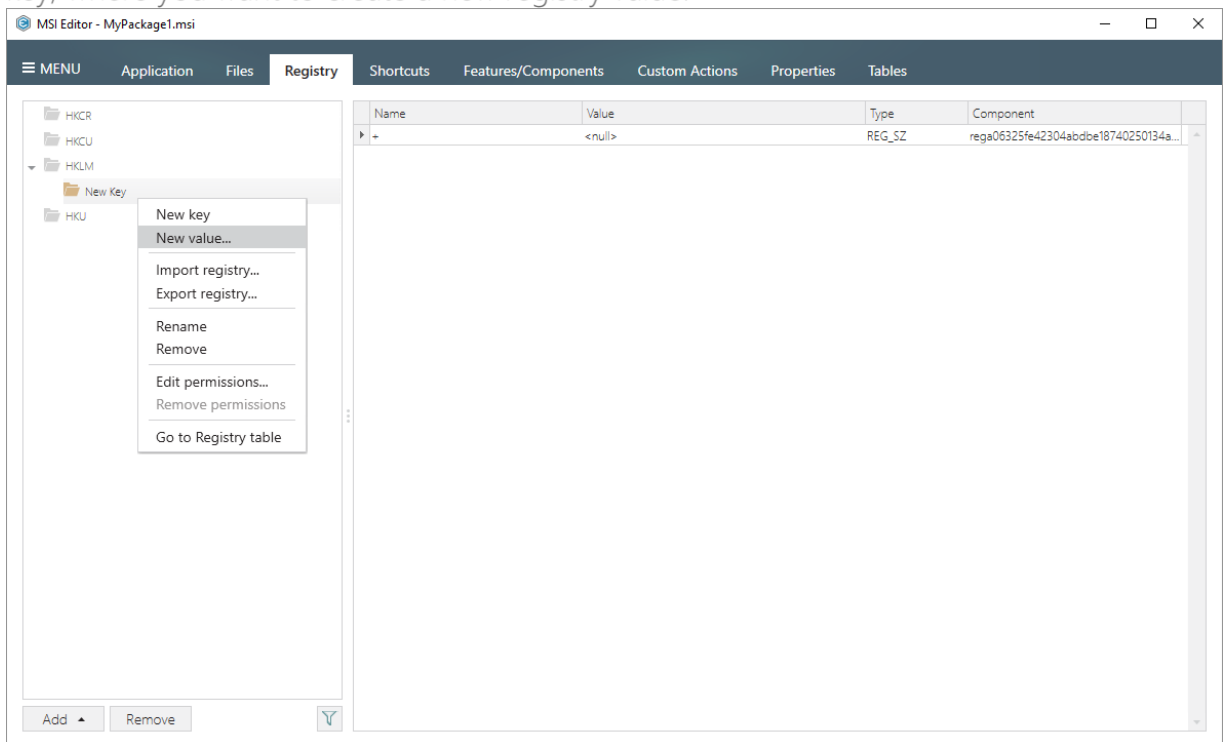
- [15]. Select New key from the context menu of a root hive (e.g. HKLM - HKEY_LOCAL_MACHINE), where you want to create a new key.



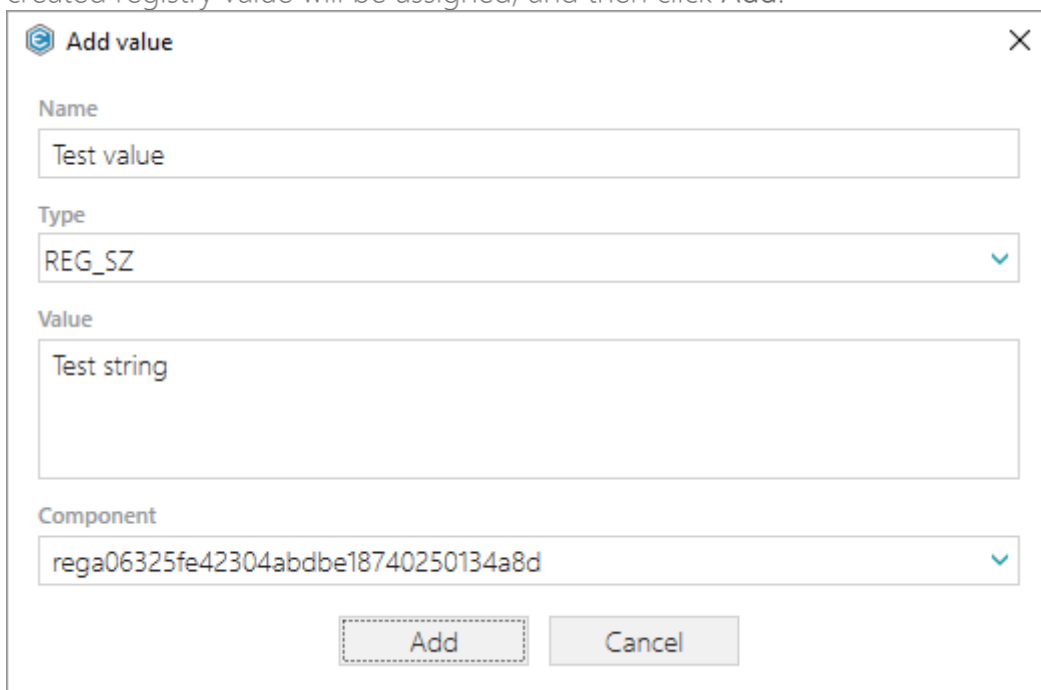
- [16]. Type a key name and click Ok.



- [17]. In order to create a new registry value, select **New value...** from the context menu of a key, where you want to create a new registry value.



- [18]. Enter a name and a value, select type from the list and component, to which the newly created registry value will be assigned, and then click **Add**.

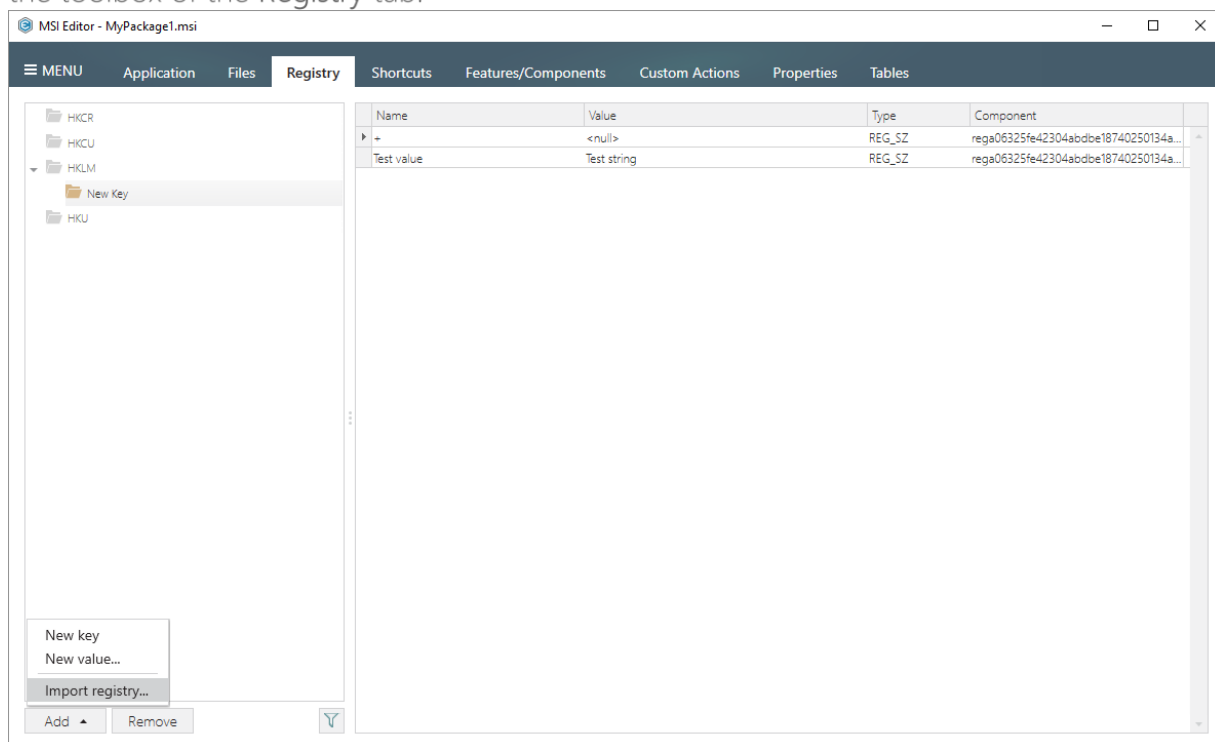


The 'Add value' dialog box is shown. It has the following fields and values:

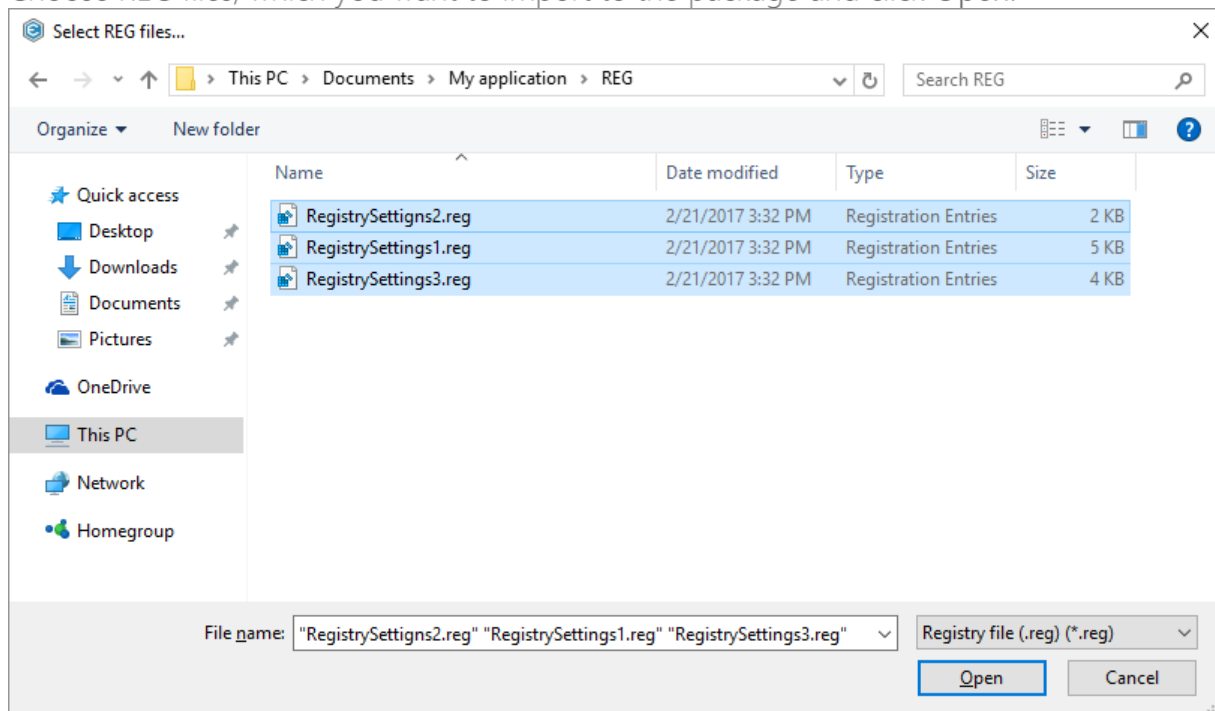
- Name:** Test value
- Type:** REG_SZ
- Value:** Test string
- Component:** rega06325fe42304abdbe18740250134a8d

The 'Add' button is highlighted with a dashed border, indicating it is the next step.

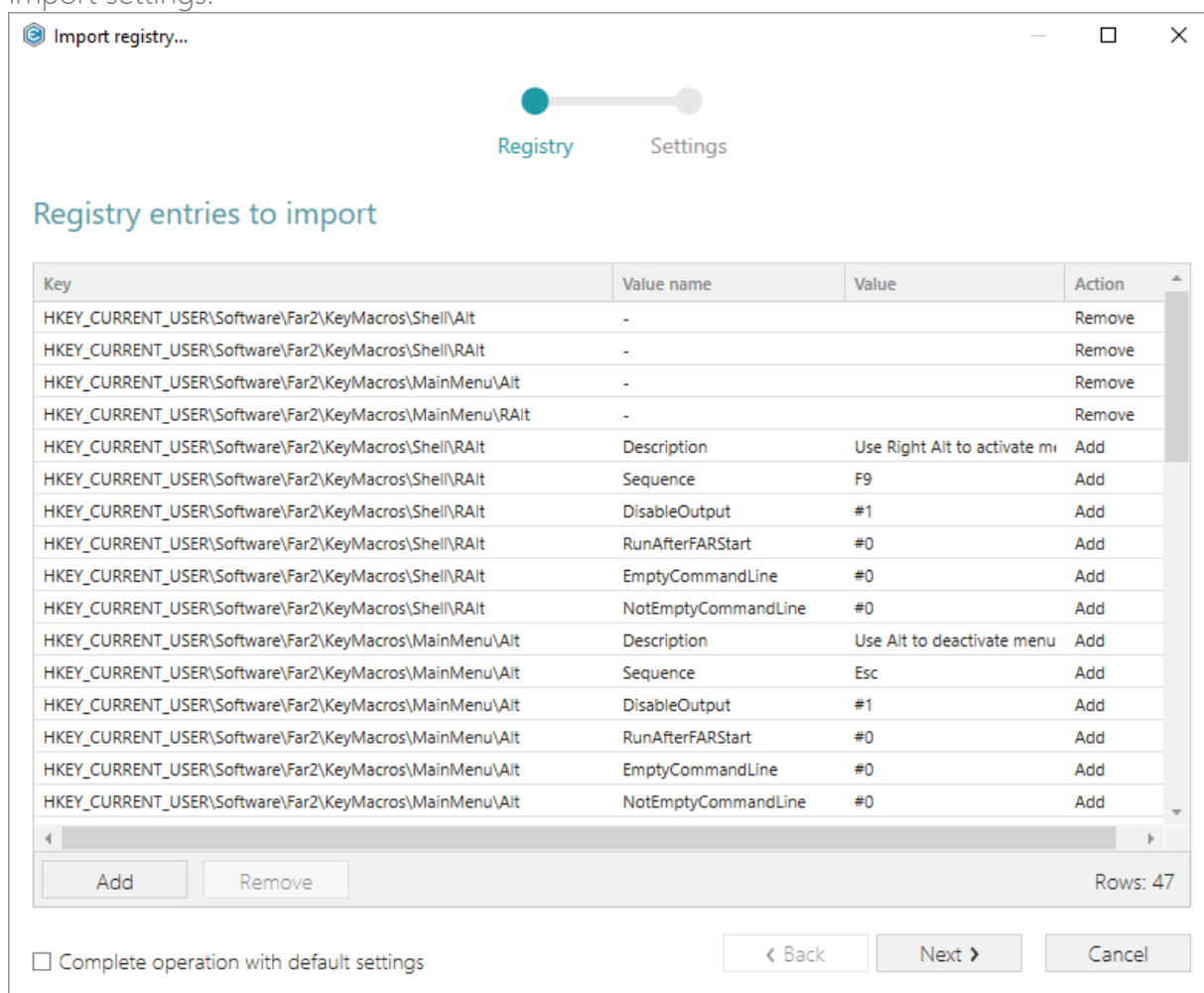
- [19]. In order to import registry entries from the REG file, select **Add -> Import registry...** from the toolbox of the Registry tab.



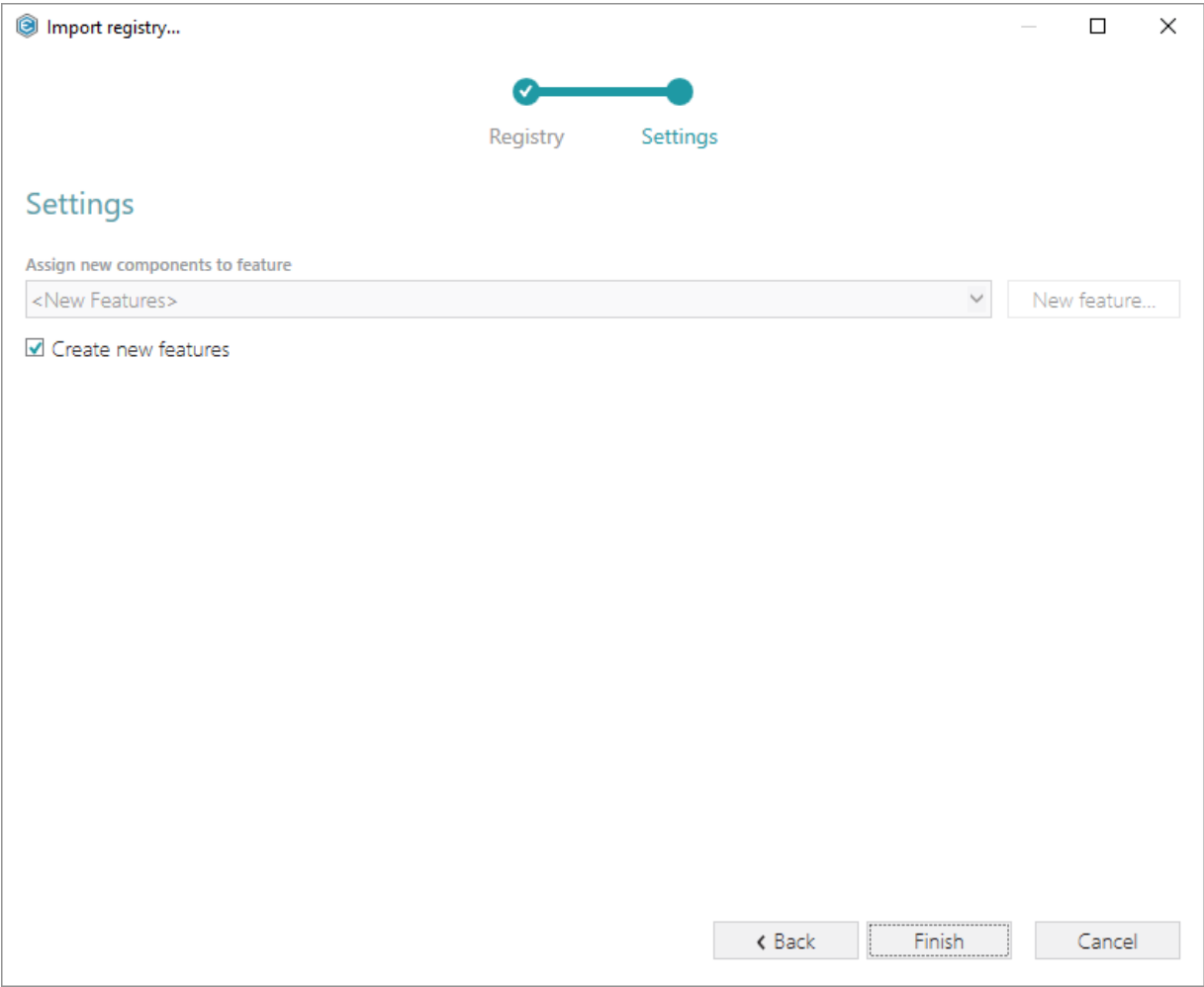
- [20]. Choose REG files, which you want to import to the package and click **Open**.



- [21]. Review the registry entries, read from the selected REG files, and click **Next** to manage the import settings.



- [22]. At this step, you can select an MSI Feature, to which component with registry entries will be assigned. Below, in the tables, you will find the detailed description of these settings. Click **Finish** to complete the import.



Feature settings

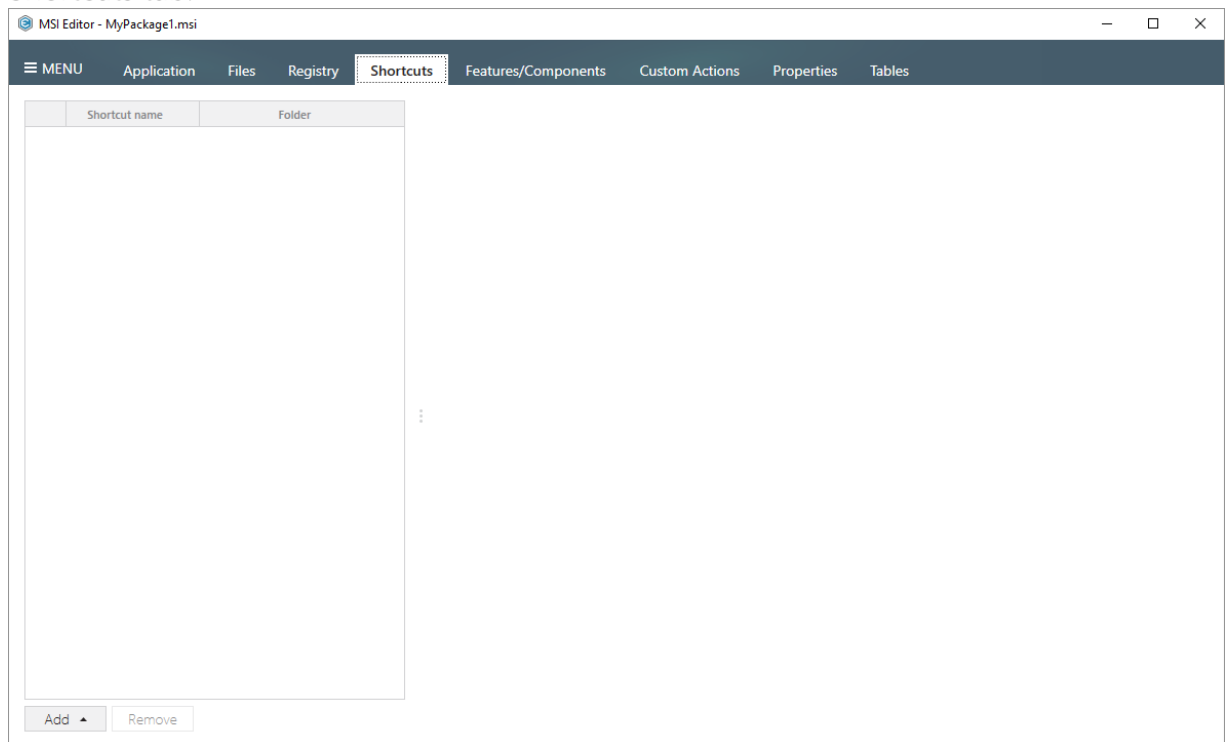
Create new features

The "PACE_Complete" feature will be created (or used if exists) for keeping components with the per-machine registry entries, and the "PACE_UserPart" feature will be created (or used if exists) for keeping components with the per-user registry entries. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart" one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

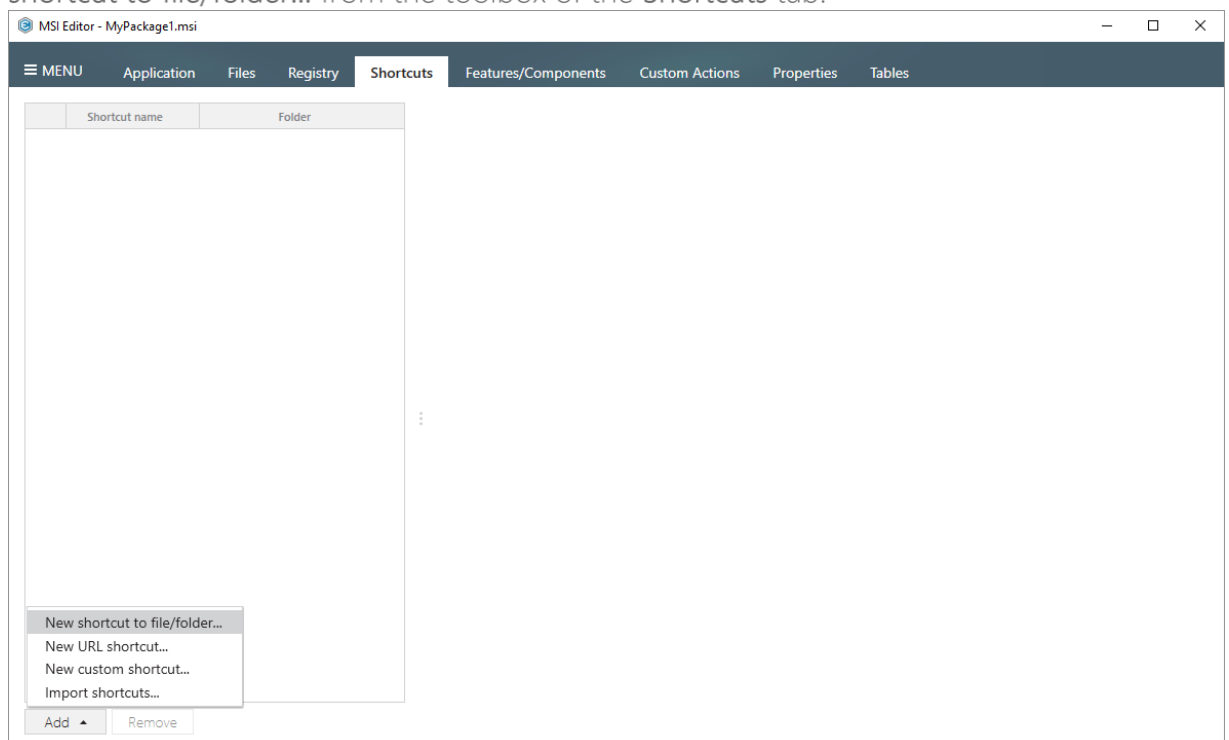
<a feature, selected from the list>

Components with the imported registry entries will be assigned to a feature, selected from the list.

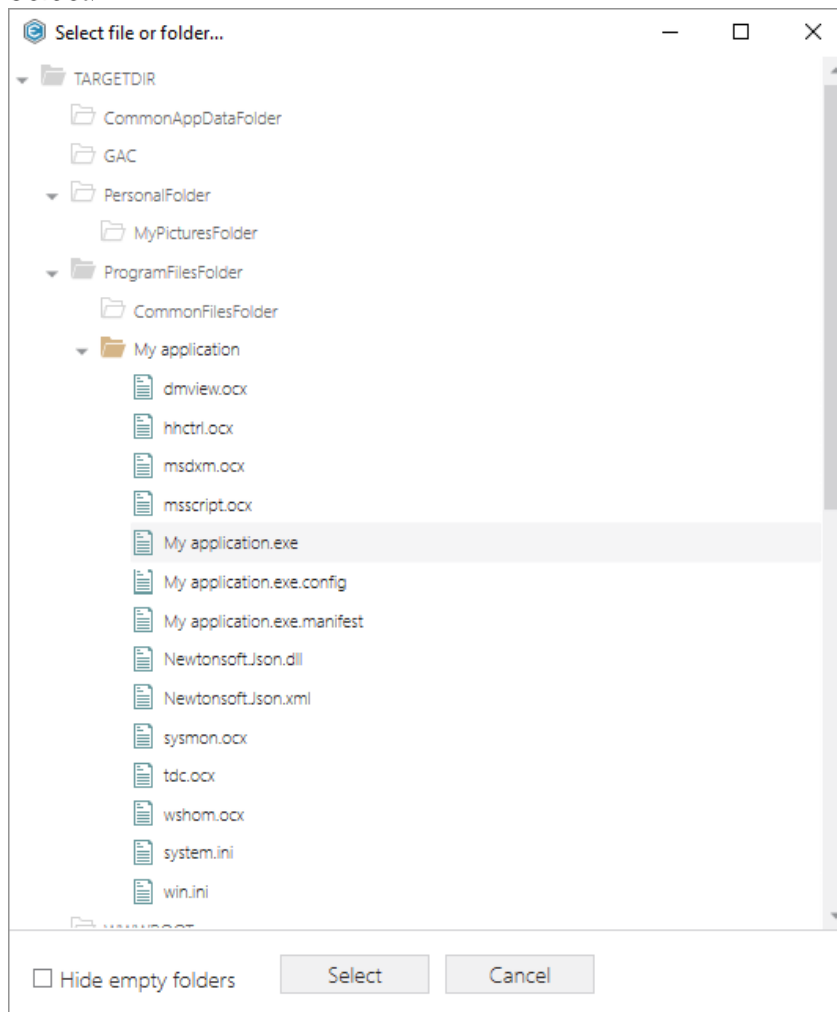
[23]. If you need to create a new or import existing shortcuts to the package, go to the Shortcuts tab.



[24]. For creating a new shortcut that points to a file inside the package, select Add -> New shortcut to file/folder... from the toolbox of the Shortcuts tab.

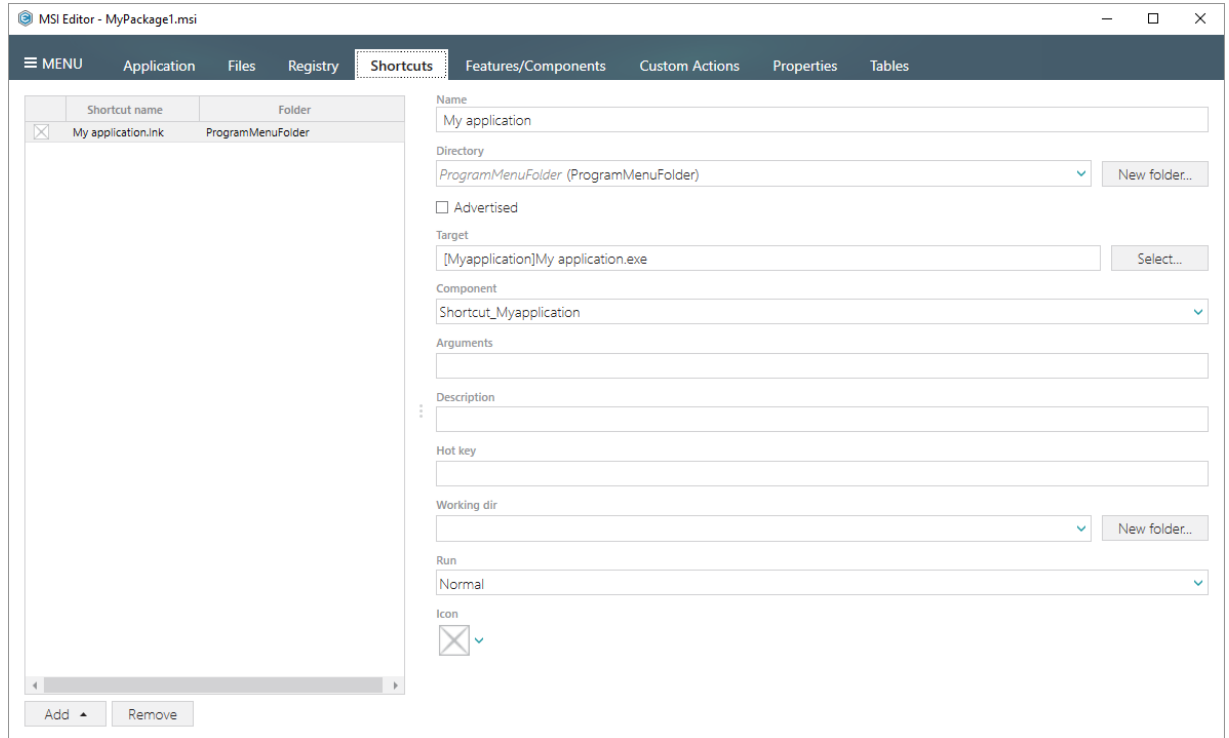


- [25]. Select a file (e.g. My application.exe), which will be launched by this shortcut, and click Select.

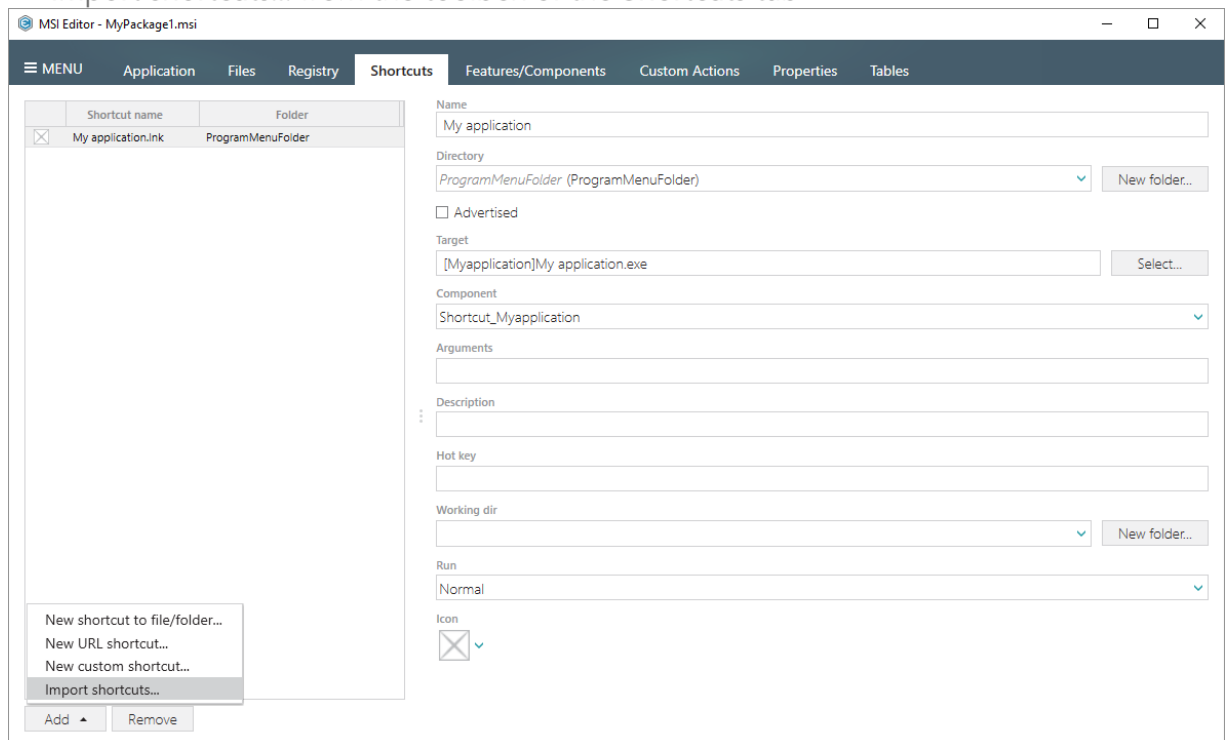


- [26]. Using the details pane, you can update the shortcut name, destination location, target, icon and so on. Select the **Advertised** option to convert the created regular shortcut to

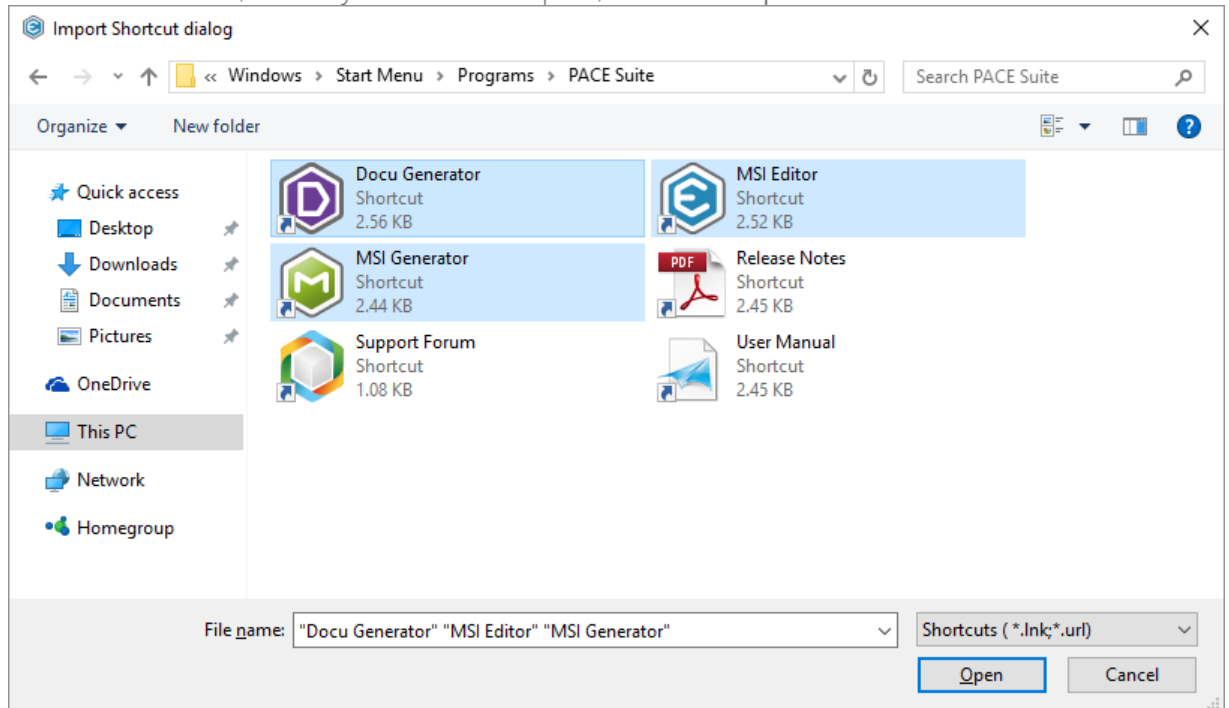
the advertised one.



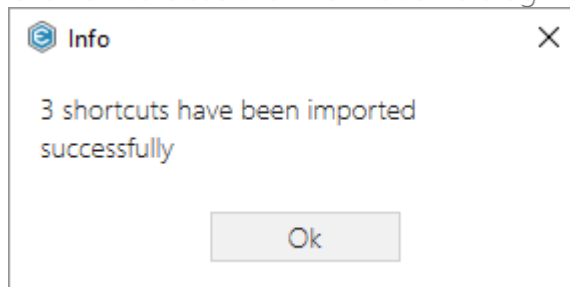
[27]. In order to import LNK and URL shortcuts to the package from the file system, select Add -> Import shortcuts... from the toolbox of the Shortcuts tab



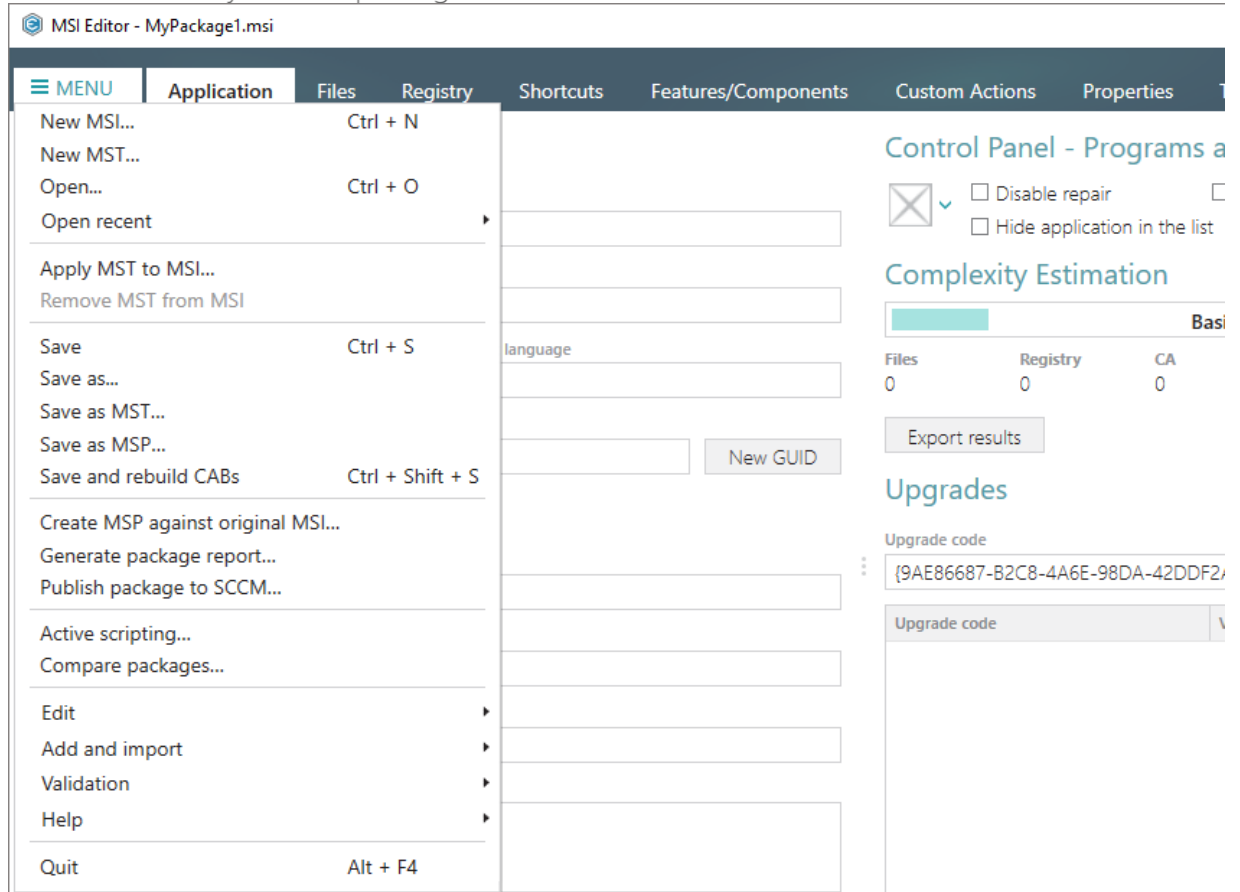
[28]. Choose shortcuts, which you want to import, and click Open.



[29]. Click Ok to close the information dialog.



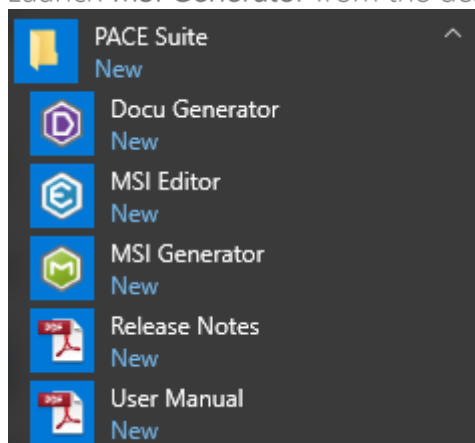
[30]. In order to save your MSI package, select **Save** from the **MENU**.



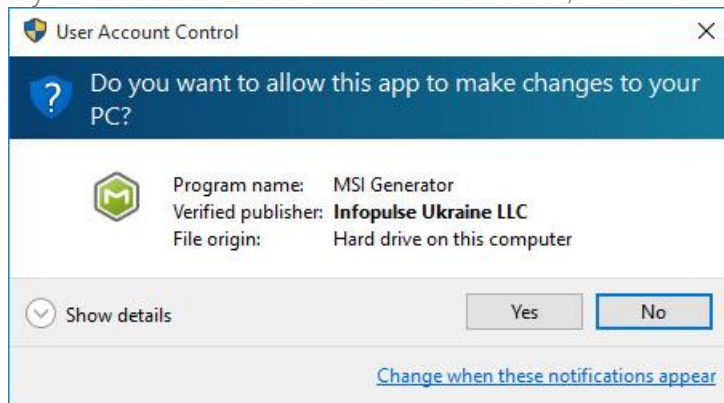
3.1.2 Generate MSI from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries and shortcuts to this project and then generate the MSI package from this project.

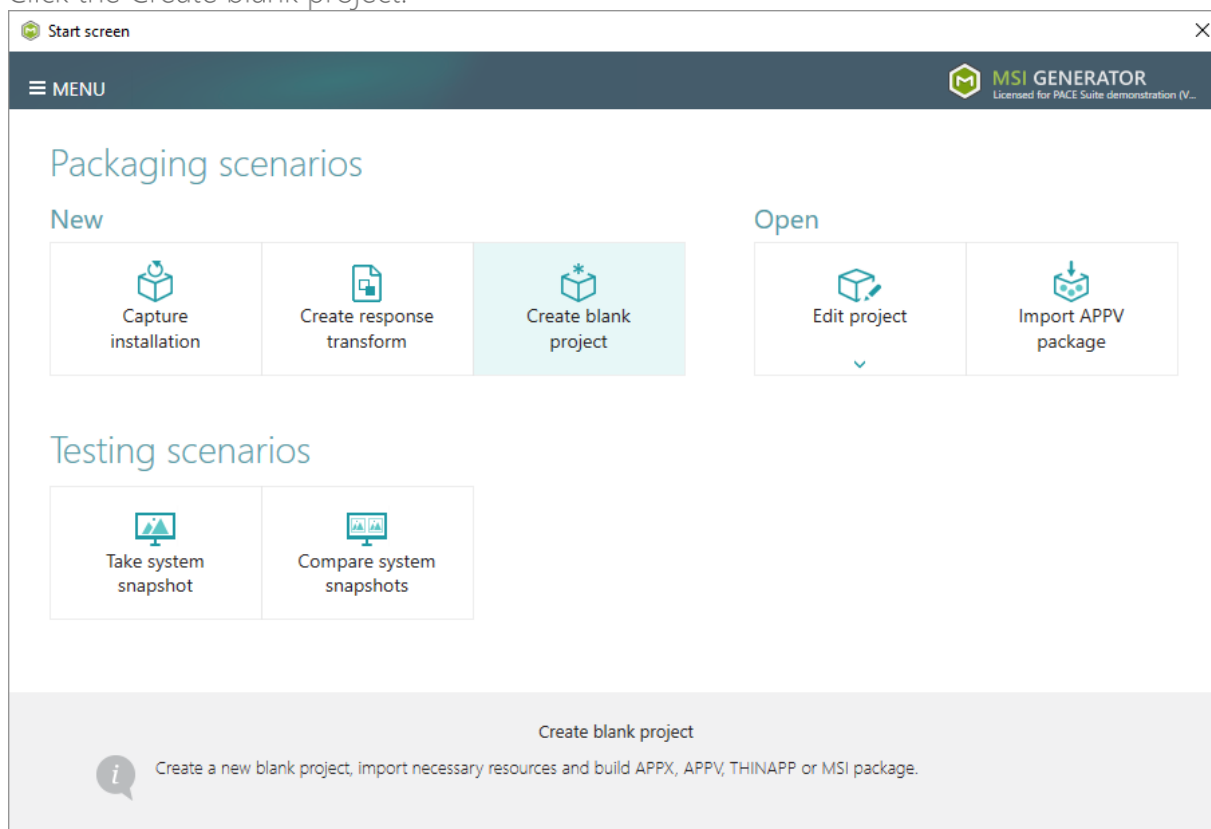
[1]. Launch MSI Generator from the desktop or the start menu shortcut.



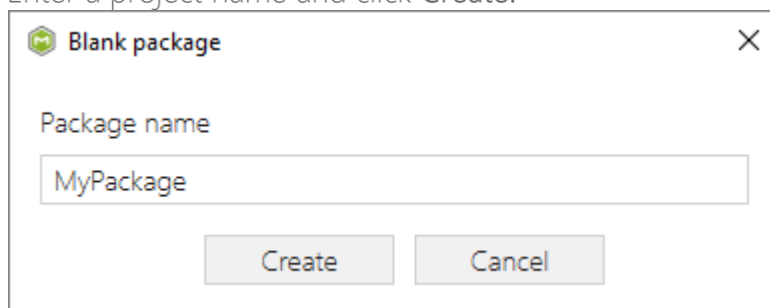
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click the Create blank project.



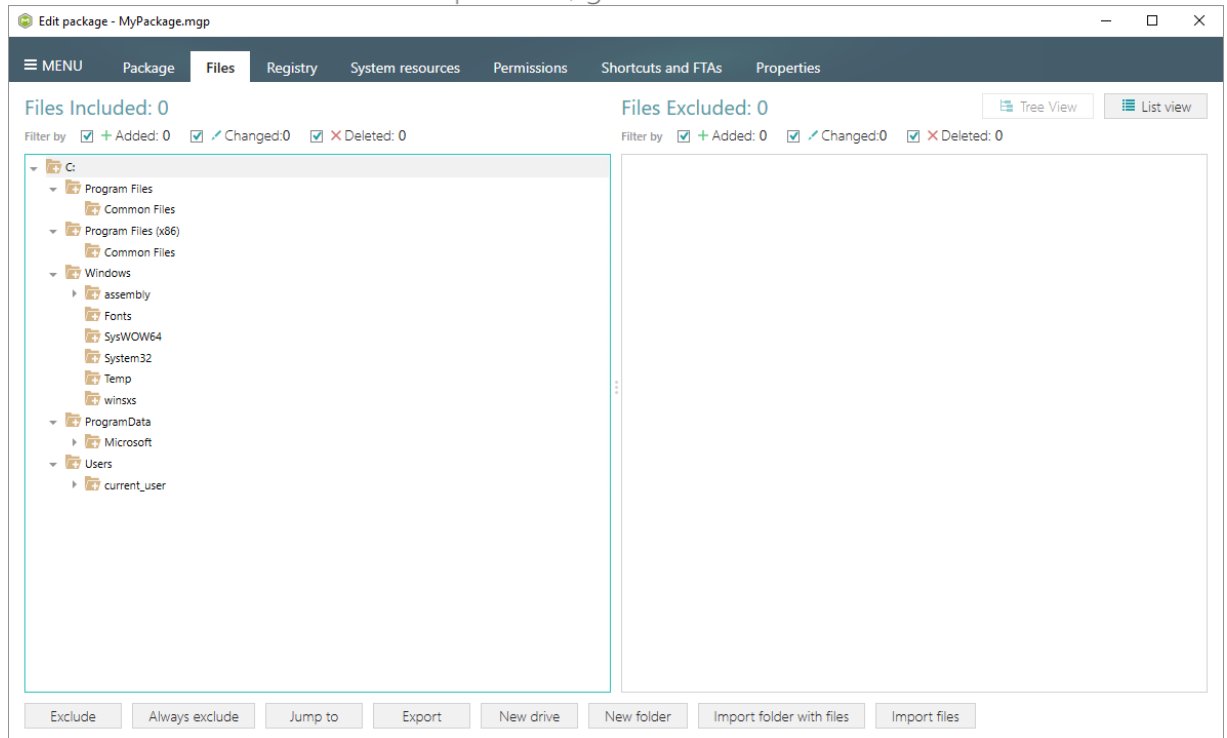
- [4]. Enter a project name and click Create.



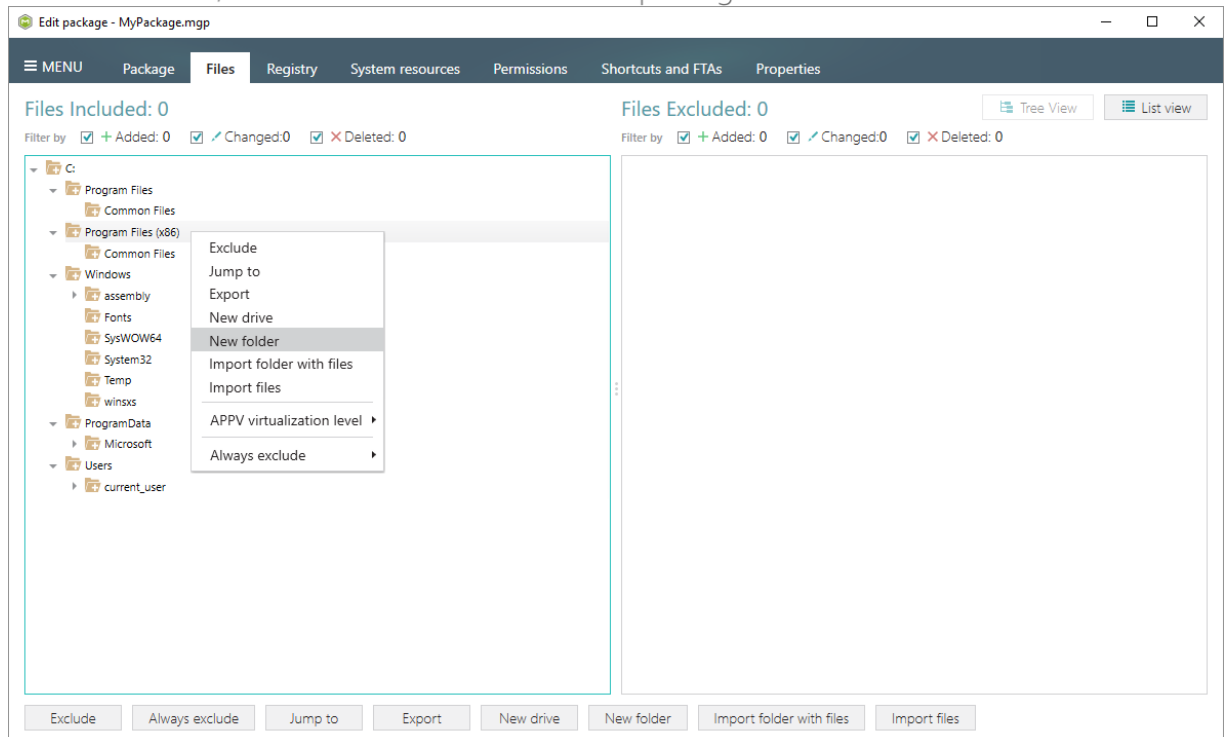
- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [10] describe how to create a new folder and import files to this folder; the steps from [11] to [13] describe how to import registry entries from the REG file; the steps from [14] to [17] describe how to

import shortcuts to the project; and two last steps [18] and [19] describe how to build MSI package from the prepared project.

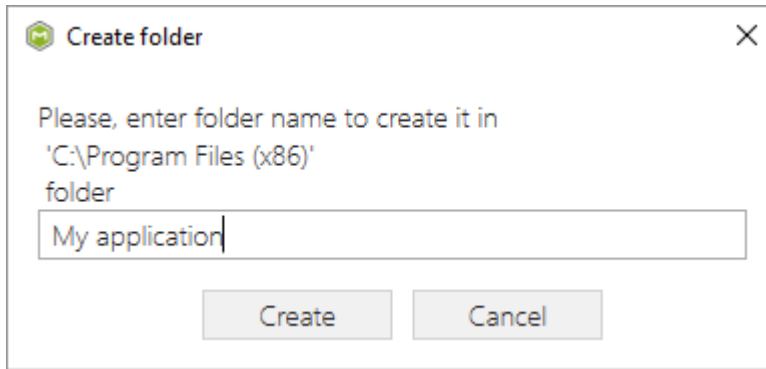
- [6]. In order to create a folder and import files, go to the Files tab.



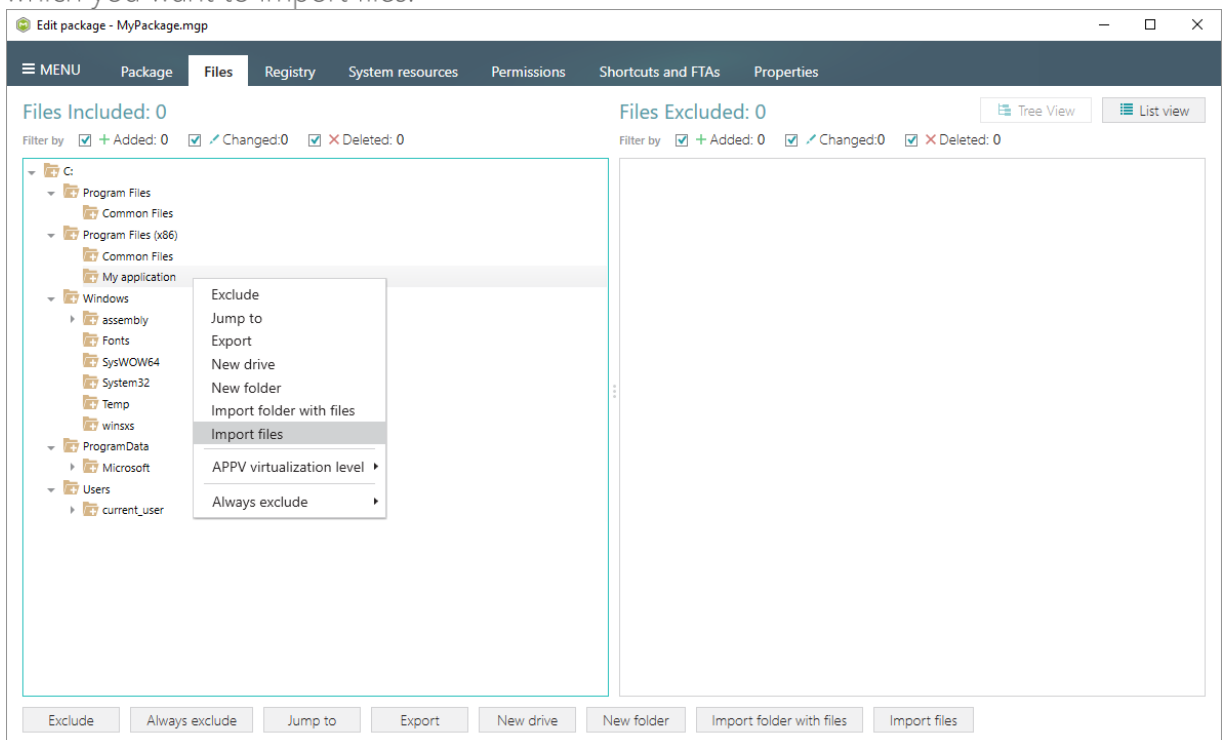
- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



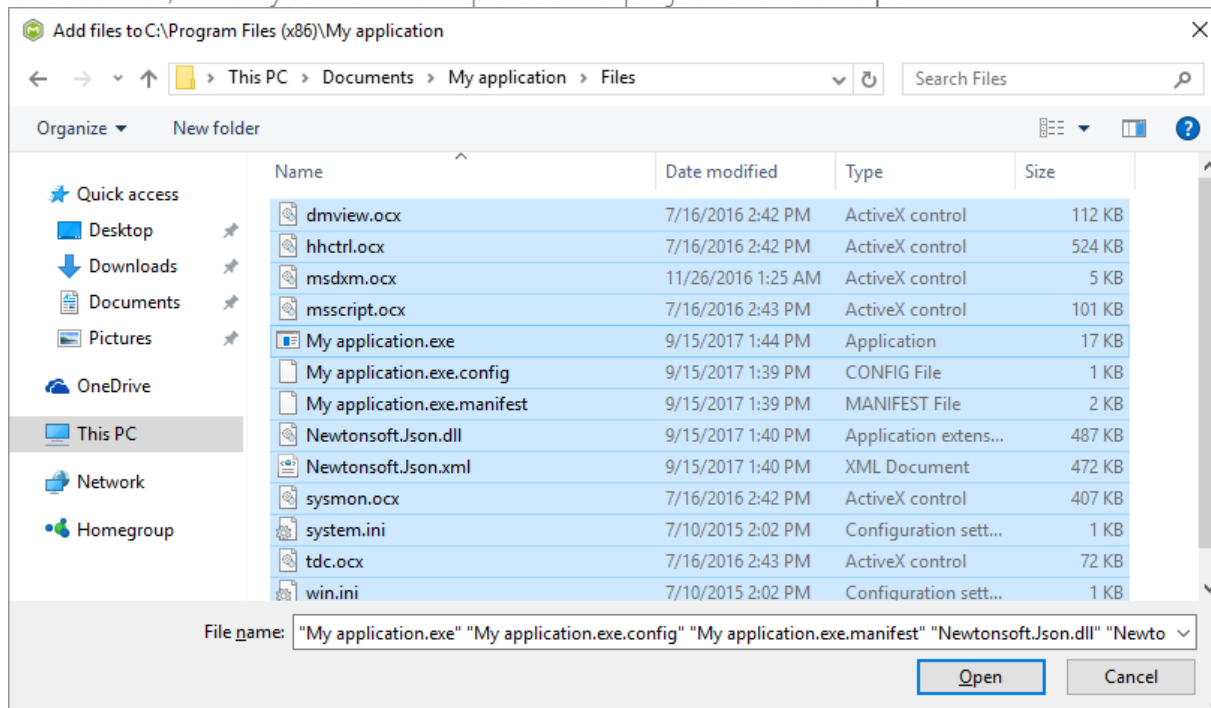
- [8]. Enter a folder name and click Create.



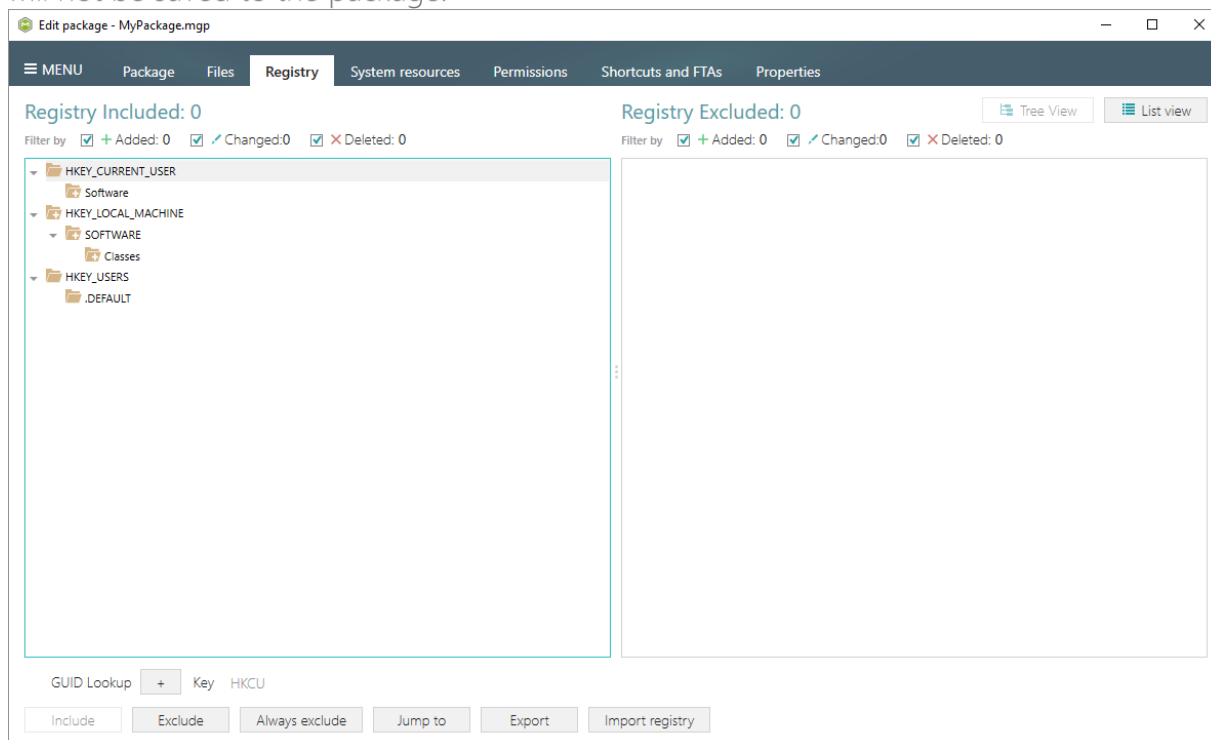
- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



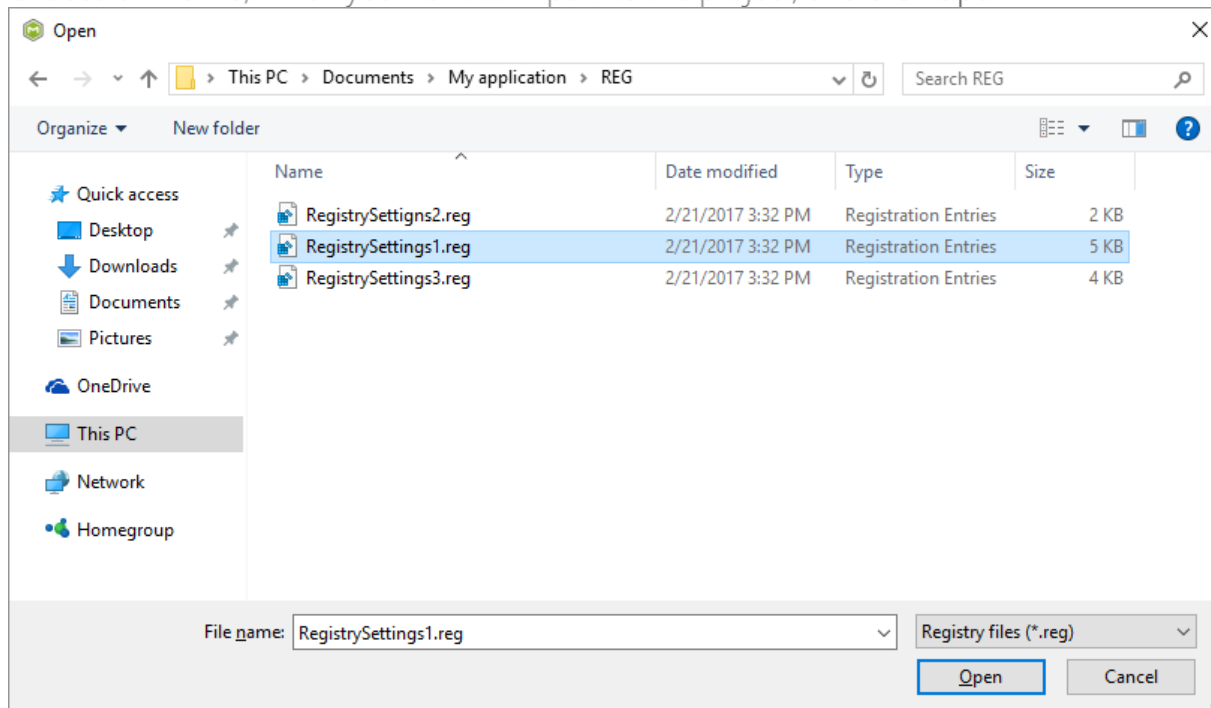
[10]. Choose files, which you want to import to the project and click **Open**.



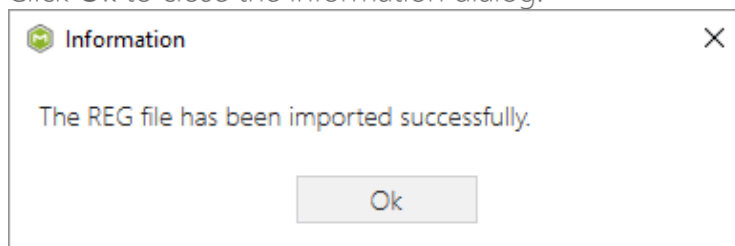
[11]. In order to import registry entries from the REG file, go to the **Registry** tab and click the **Import registry** button, located in the bottom part of the window. Note that the left 'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



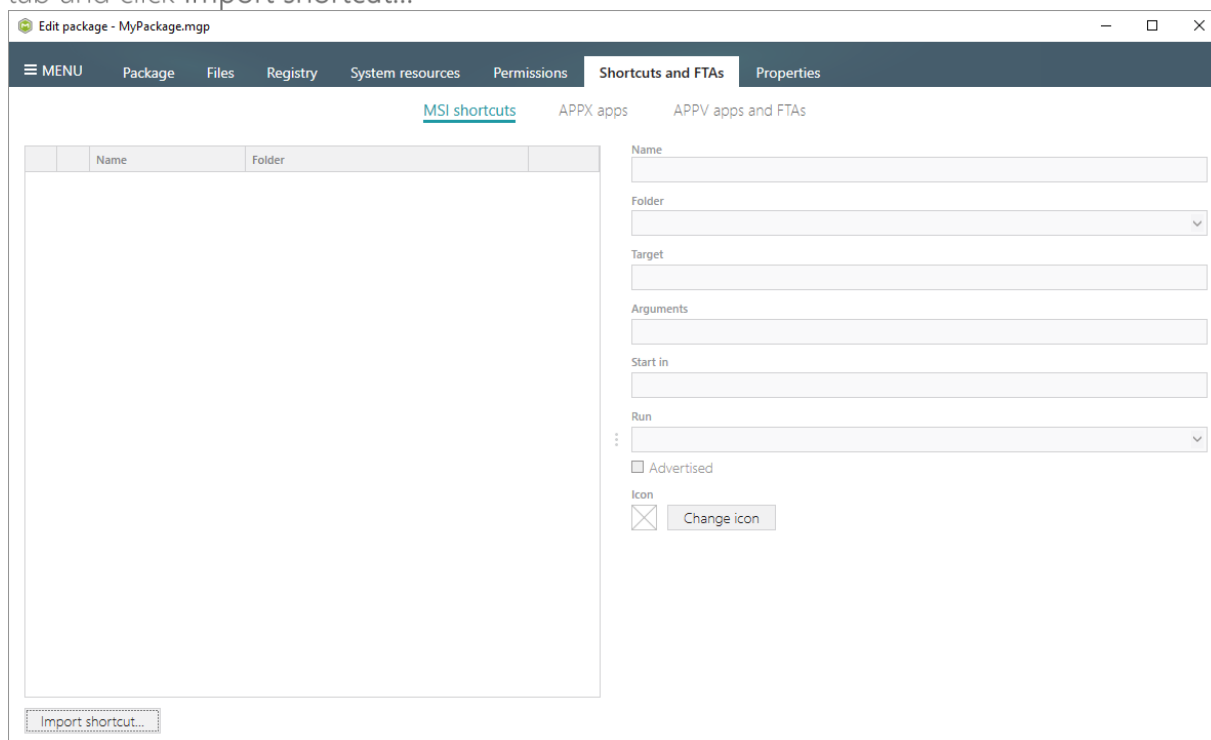
[12]. Choose a REG file, which you want to import to the project, and click Open.



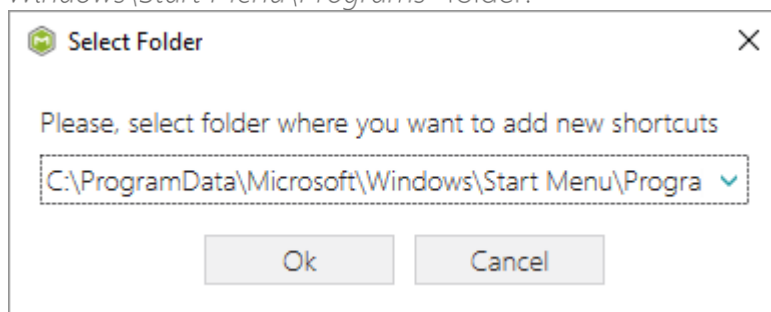
[13]. Click Ok to close the information dialog.



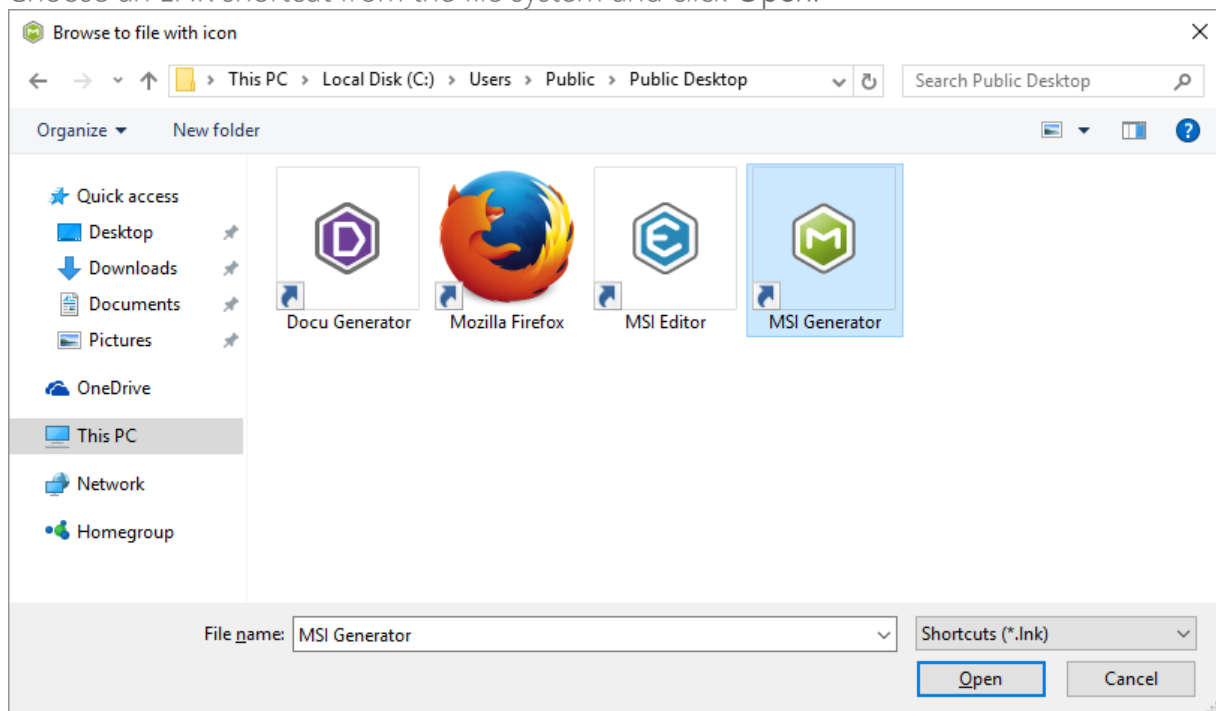
[14]. If you need to add shortcuts to the project, go to the Shortcuts and FTAs -> MSI shortcuts tab and click Import shortcut...



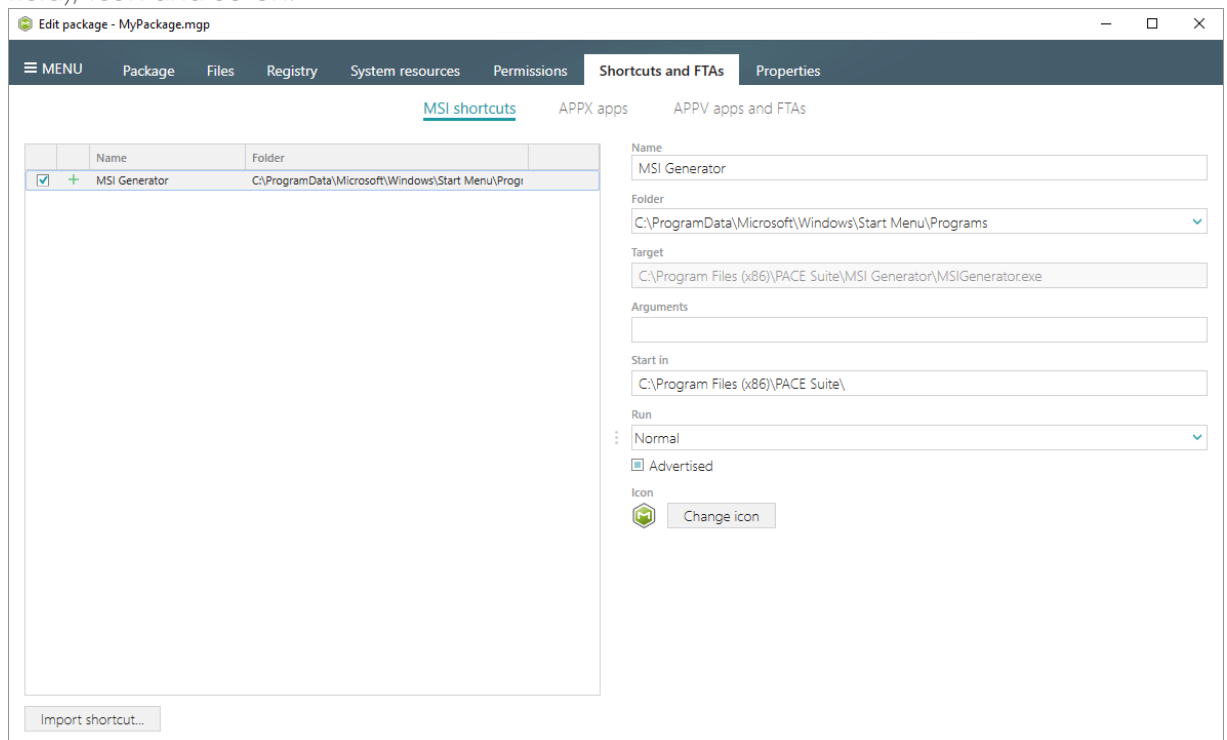
- [15]. Select a folder from the list, where your newly imported shortcut will be installed, and click Ok. Note that the Start menu shortcuts are located at "C:\ProgramData\Microsoft\Windows\Start Menu\Programs" folder.



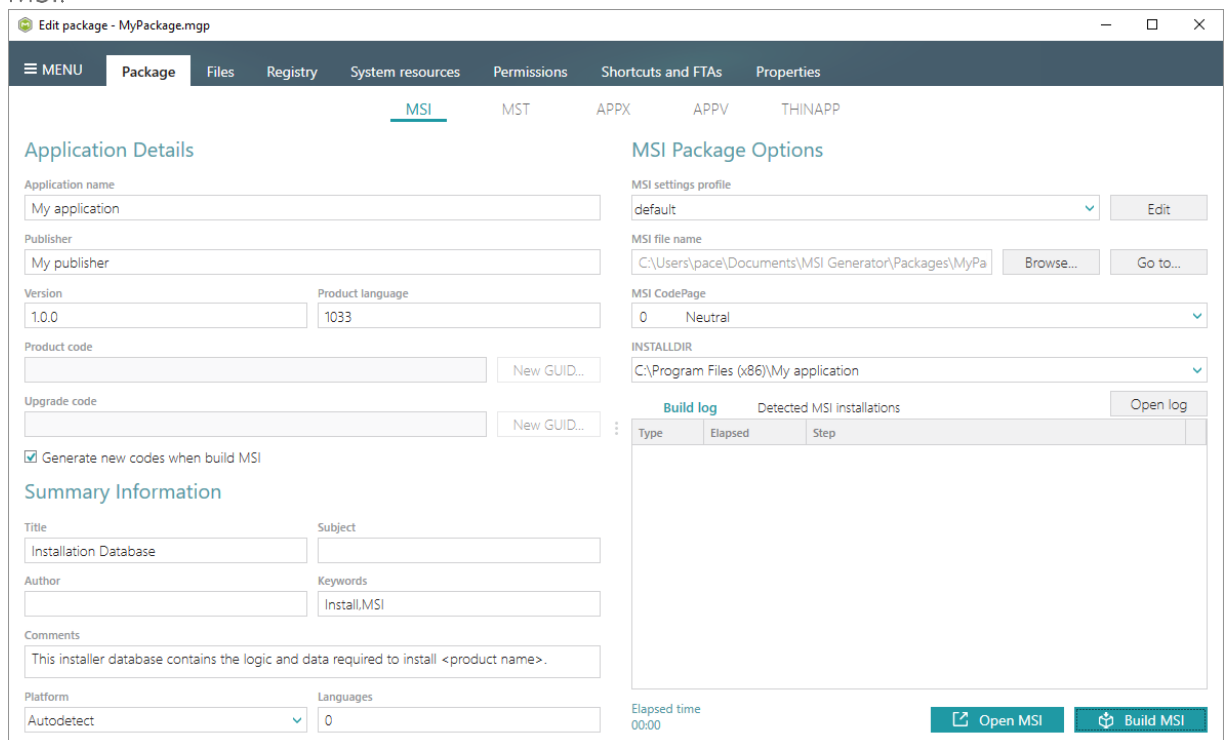
- [16]. Choose an LNK shortcut from the file system and click Open.



- [17]. Using the details pane, you can update the shortcut name, destination location ("Folder" field), icon and so on.



- [18]. In order to build MSI package from your project, navigate to the Package -> MSI tab, update Application Details like name, publisher, version, select INSTALLDIR and click Build MSI.



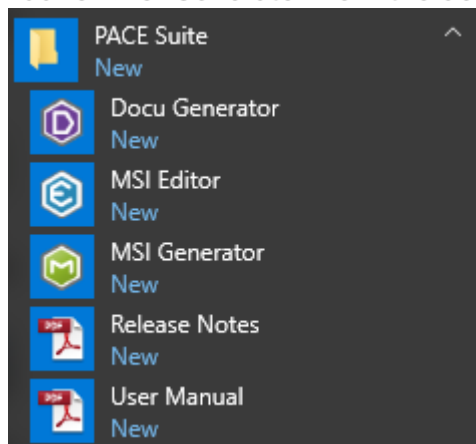
- [19]. Click **Go to...**, located next to the MSI file name field, to open the package containing folder in Windows Explorer.

The screenshot shows the 'Edit package - MyPackage.mgp' window. The 'Package' tab is active, and the 'MSI' sub-tab is selected. The 'Application Details' section on the left includes fields for Application name (My application), Publisher (My publisher), Version (1.0.0), Product language (1033), Product code, and Upgrade code. A checkbox for 'Generate new codes when build MSI' is checked. The 'Summary Information' section includes fields for Title (Installation Database), Subject, Author, Keywords (Install.MSI), and Comments. The 'Platform' is set to 'Autodetect' and 'Languages' to '0'. The 'MSI Package Options' section on the right includes 'MSI settings profile' (default), 'MSI file name' (C:\Users\pace\Documents\MSI Generator\Packages\MyPa), 'MSI CodePage' (0 Neutral), and 'INSTALLDIR' (C:\Program Files (x86)\My application). A 'Build log' table shows the progress of the build process, including steps like 'Operation was completed successfully', 'Writing data to the _Validation table', 'Writing data to the CreateFolder table', 'Writing data to the AdvExecuteSequence table', 'Writing data to the InstallExecuteSequence table', 'Writing data to the CustomAction table', 'Writing data to the MsiAssemblyName table', 'Writing data to the MsiAssembly table', 'Importing cabinet (CAB) file into the MSI - "MyPac.1.cab"', 'Writing data to the Media table', and 'Creating CAB file(s) completed'. The 'Elapsed time' is 00:00:12. Buttons for 'Open MSI' and 'Build MSI' are at the bottom right.

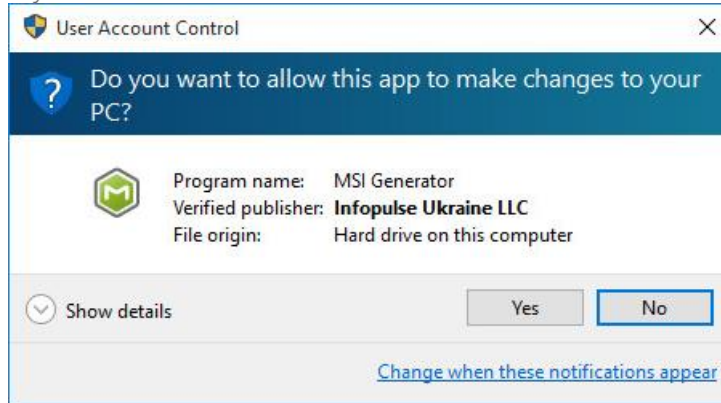
3.1.3 Convert (Repackage) EXE to MSI

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.

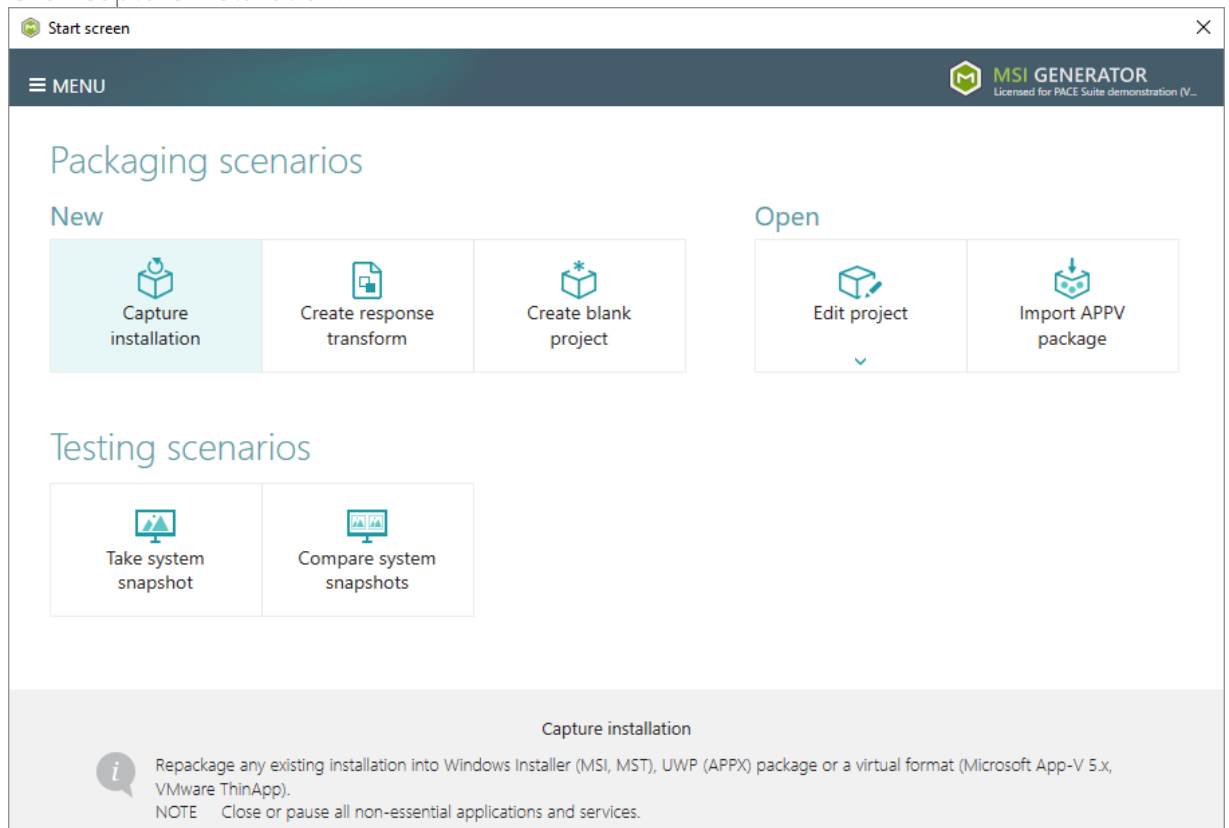
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



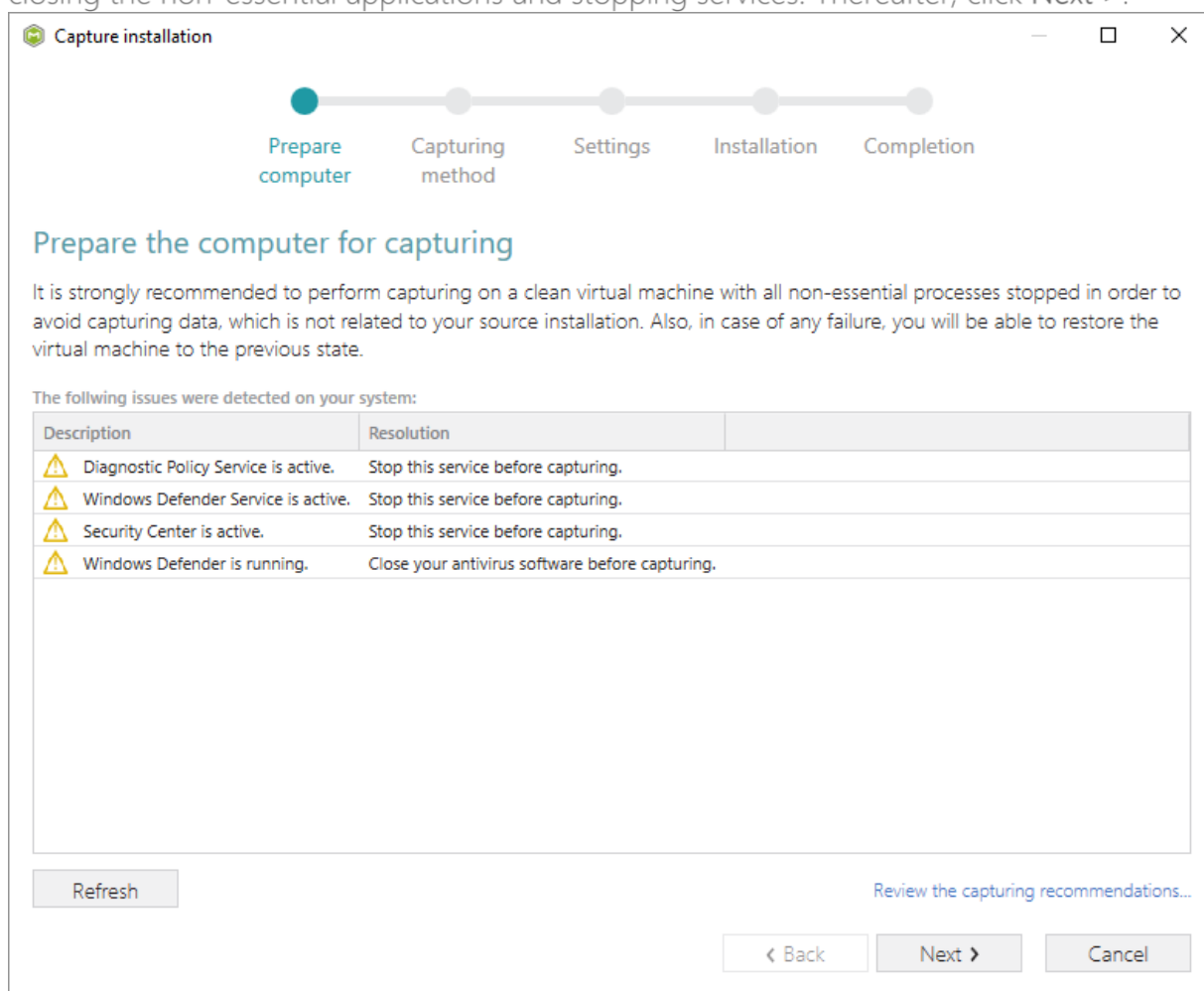
- [2]. If you have User Account Control enabled, click Yes in the opened window.



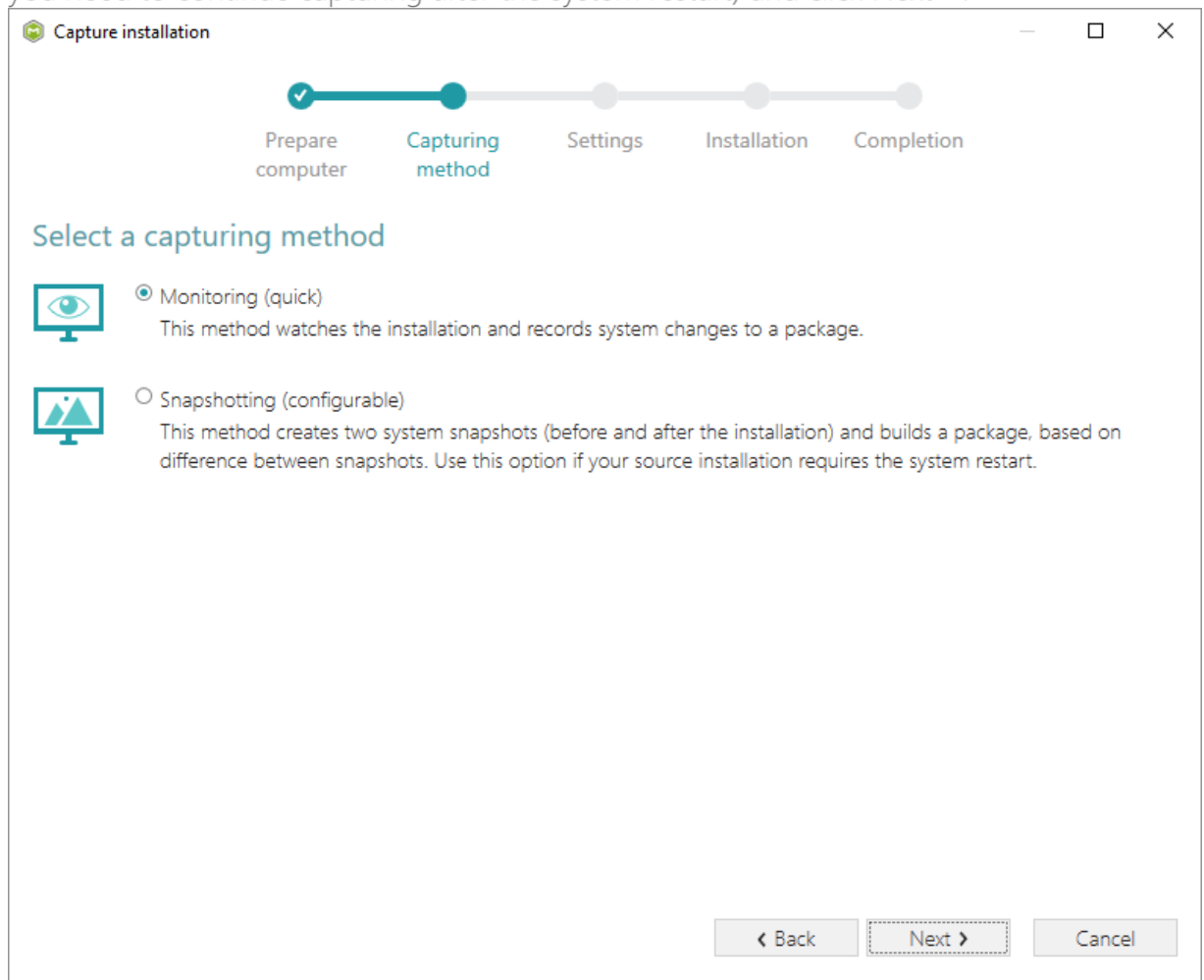
- [3]. Click Capture installation.



- [4]. Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- [5]. Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- [6]. Here you can review and update package name, disable needless exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Progress bar: Prepare computer, Capturing method, **Settings**, Installation, Completion

Settings

Package name: PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

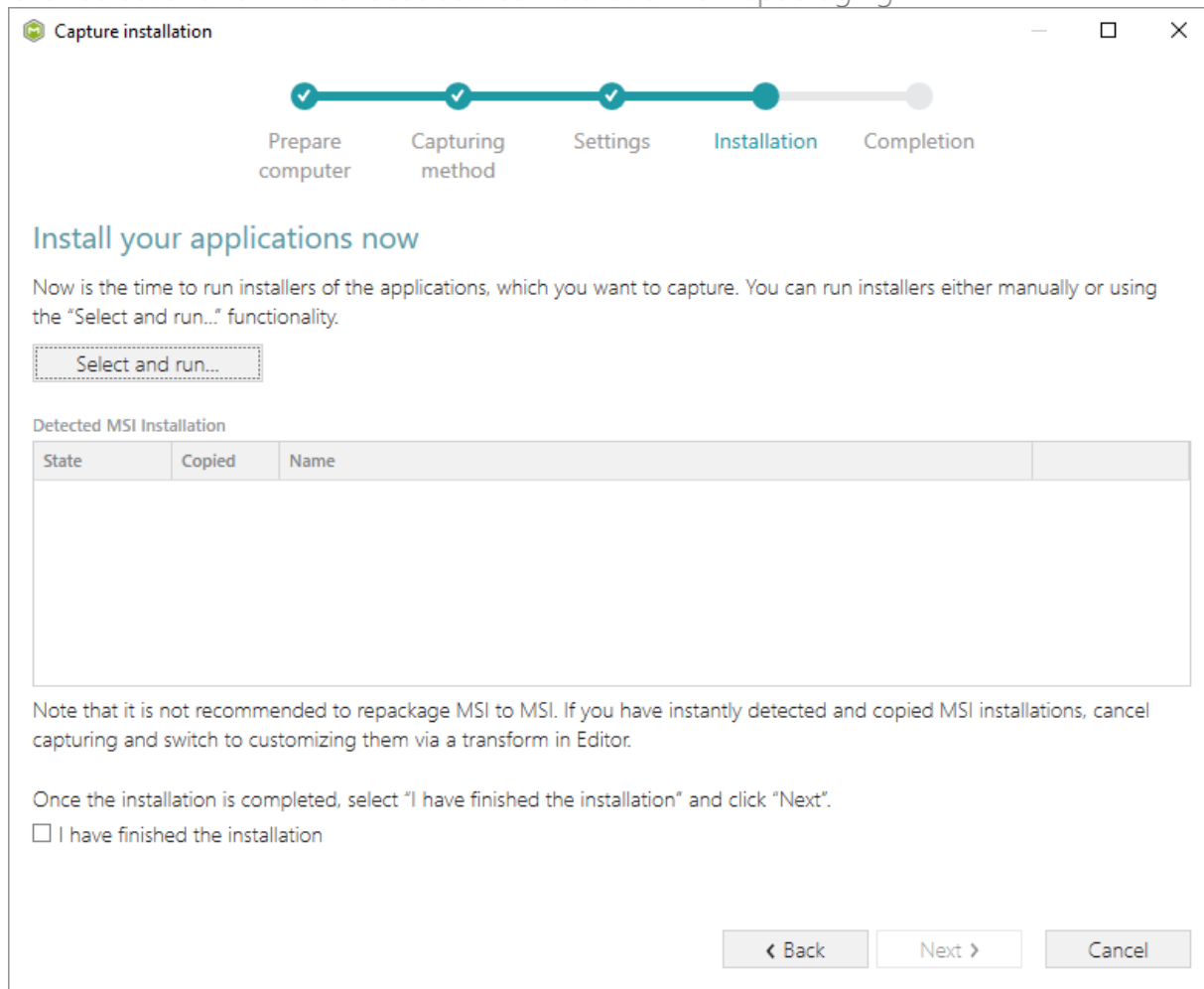
Scanning areas

Application objects:

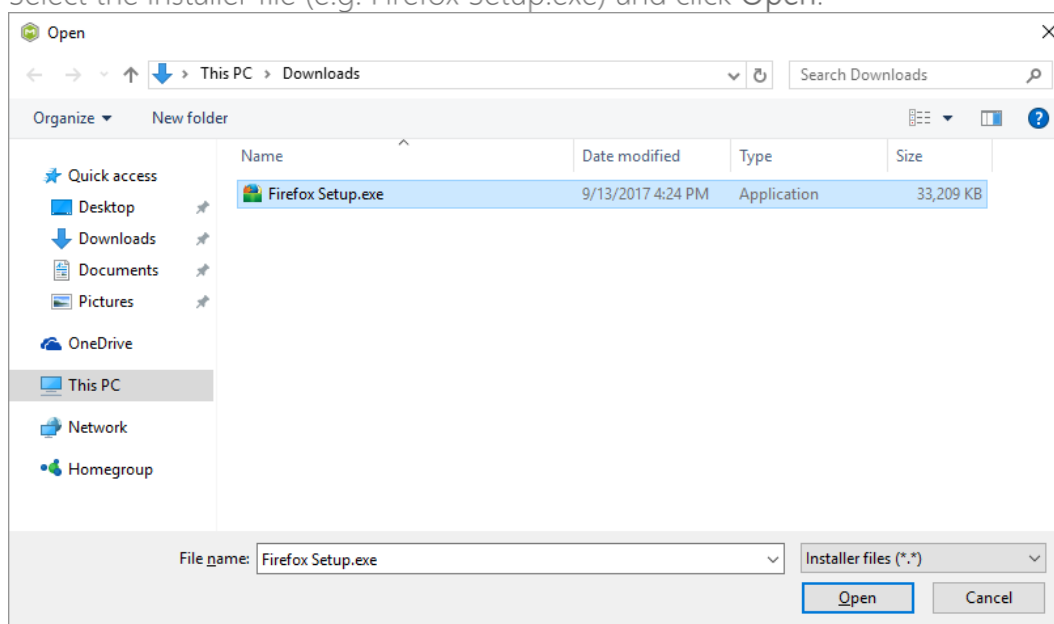
- ☒ Permissions
- ☒ Services
- ☒ Printers

Buttons: < Back, **Next >**, Cancel

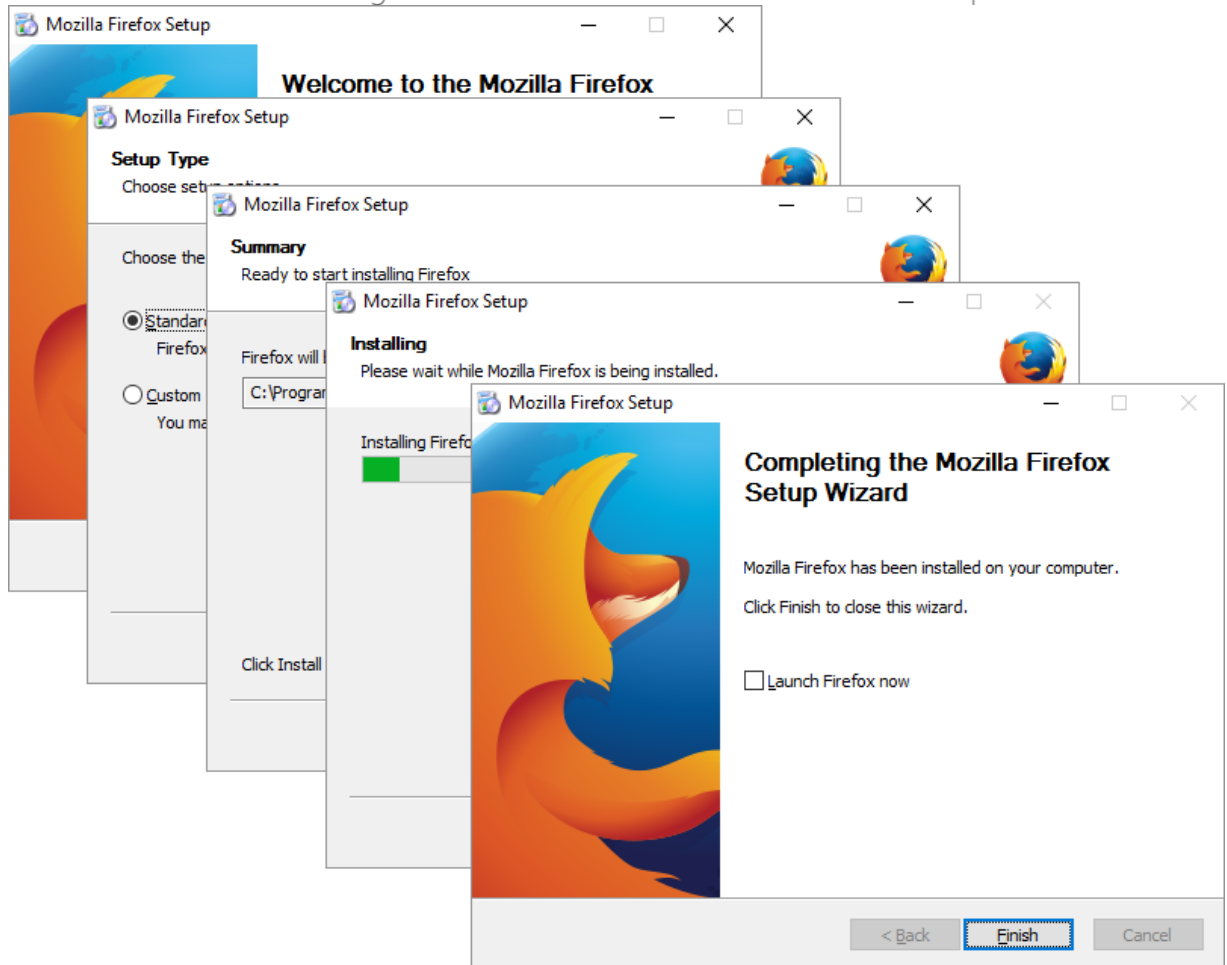
- [7]. Click **Select and run...** to choose source installation for repackaging.



- [8]. Select the installer file (e.g. Firefox Setup.exe) and click **Open**.



- [9]. Follow the installation dialogs of the launched source installation to complete it.



- [10]. Once the source installation is completed, we recommend to check if the **Detected MSI installations** tab does not contain found MSI installers. Even if your sources installation is an EXE file, it could contain embedded MSI installers, launched hiddednly. As you may know, repackaging existing vendor MSI installers into MSI is against Microsoft best practices.
- So, if the **Detected MSI installations** tab contains a found MSI installer, consider canceling this capturing (repackaging) process and switching to editing it in MSI Editor (Edit MSI/MST is described in section 3.7). Note that the found MSI installers are copied to the

project folder.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

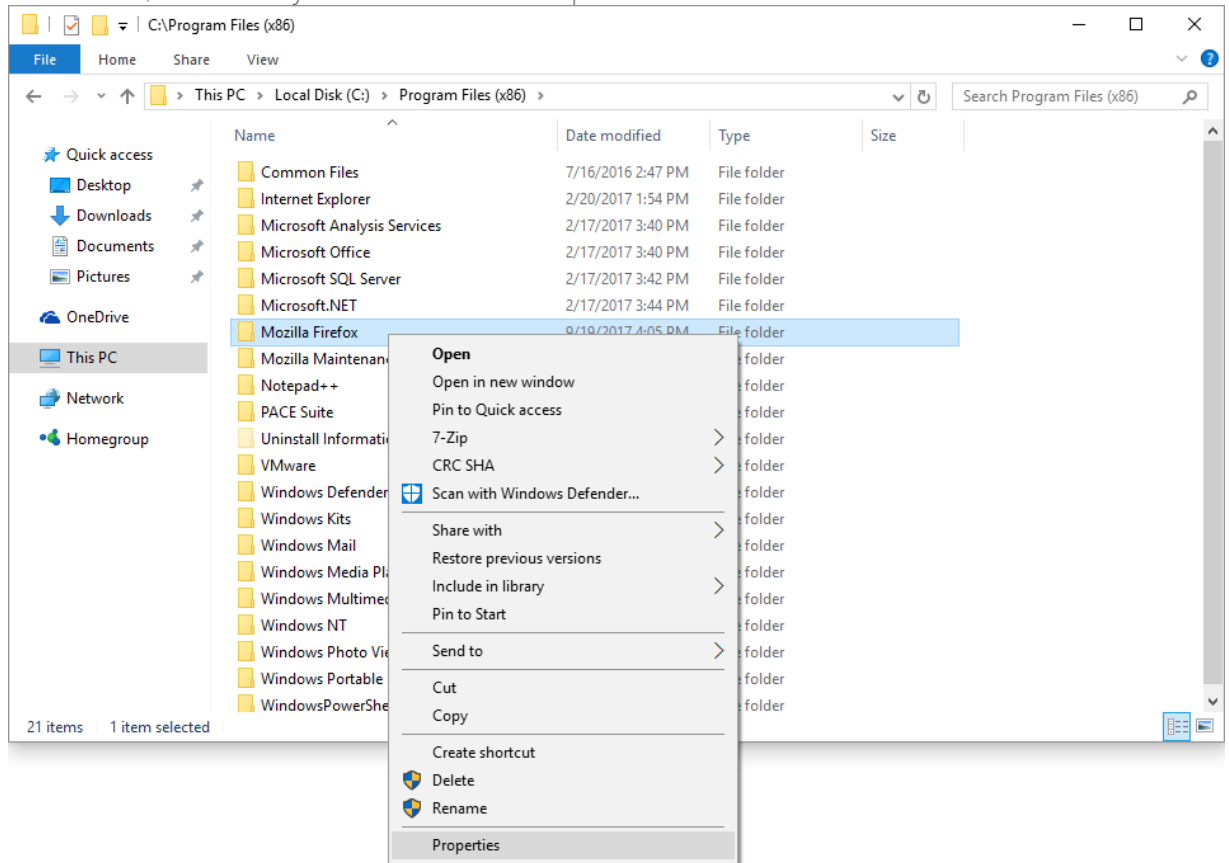
Once the installation is completed, select "I have finished the installation" and click "Next".

☐ I have finished the installation

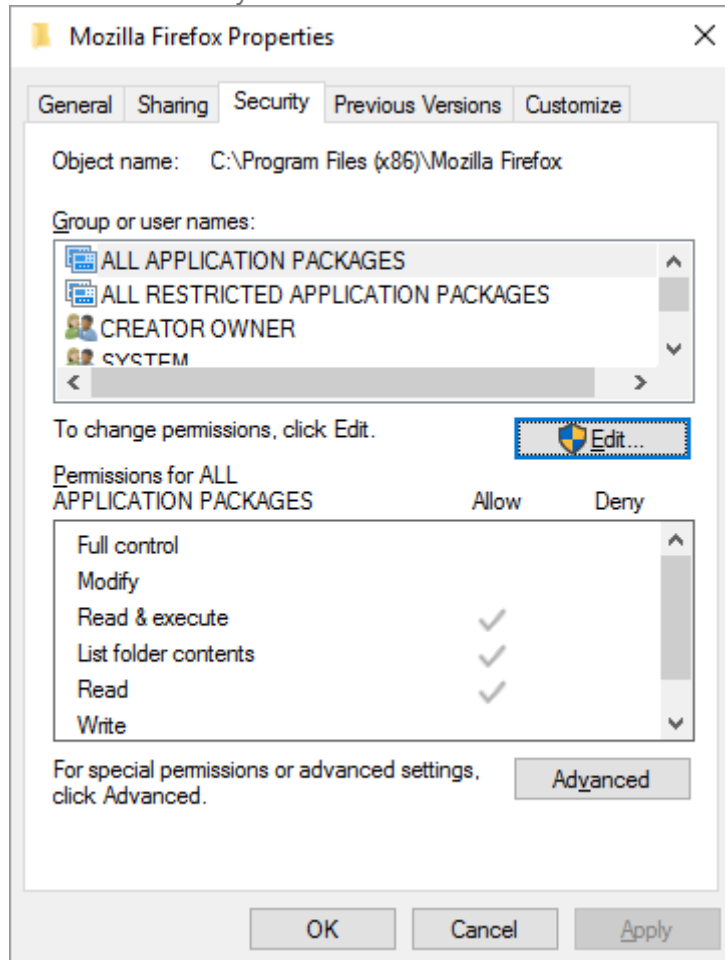
< Back Next > Cancel

- [11]. Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.
- [12]. If you additionally need to change the default permission settings on a folder or a file and include them to the package, select **Properties** from the Windows Explorer context menu

of a folder, on which you want to set new permissions.

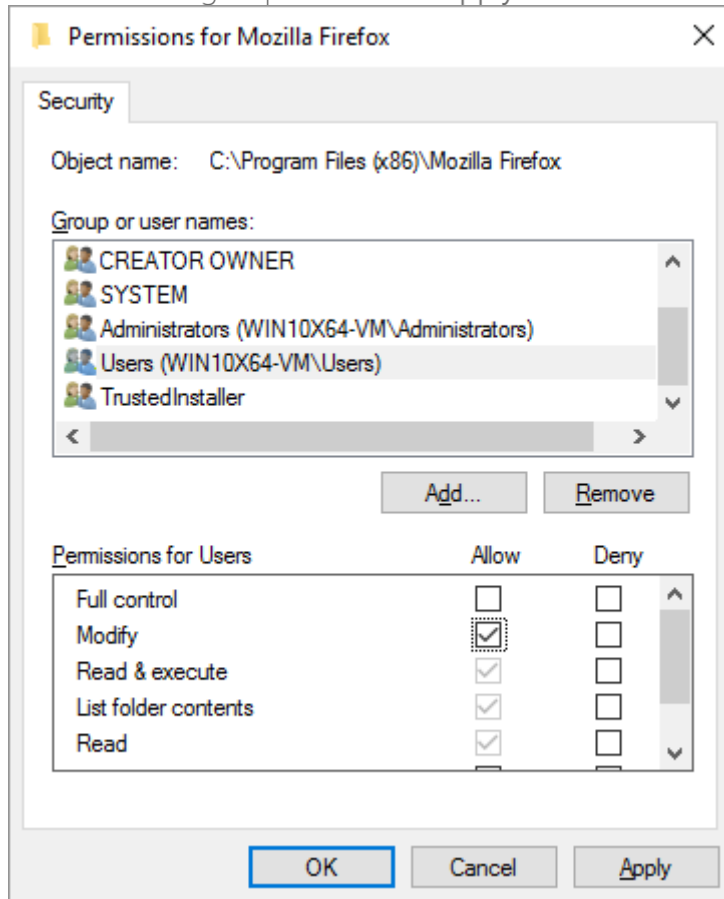


[13]. Go to the Security tab and click Edit.

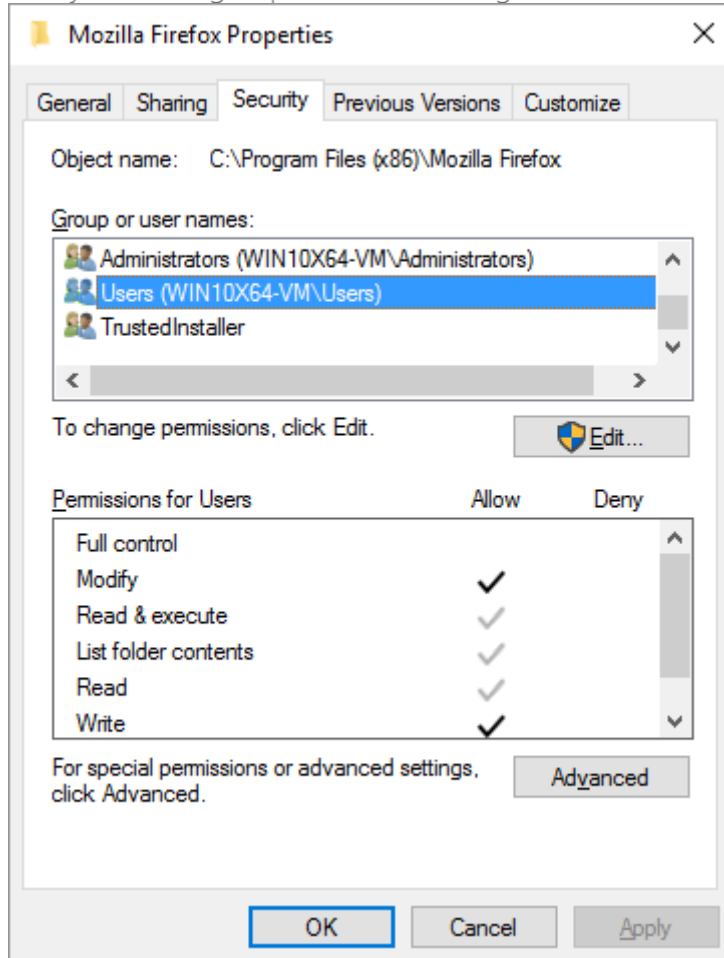


[14]. Select a group or a user, for which you want to change the permissions and then select the necessary access rights. For example, let's set the 'Write' and the 'Modify' access rights

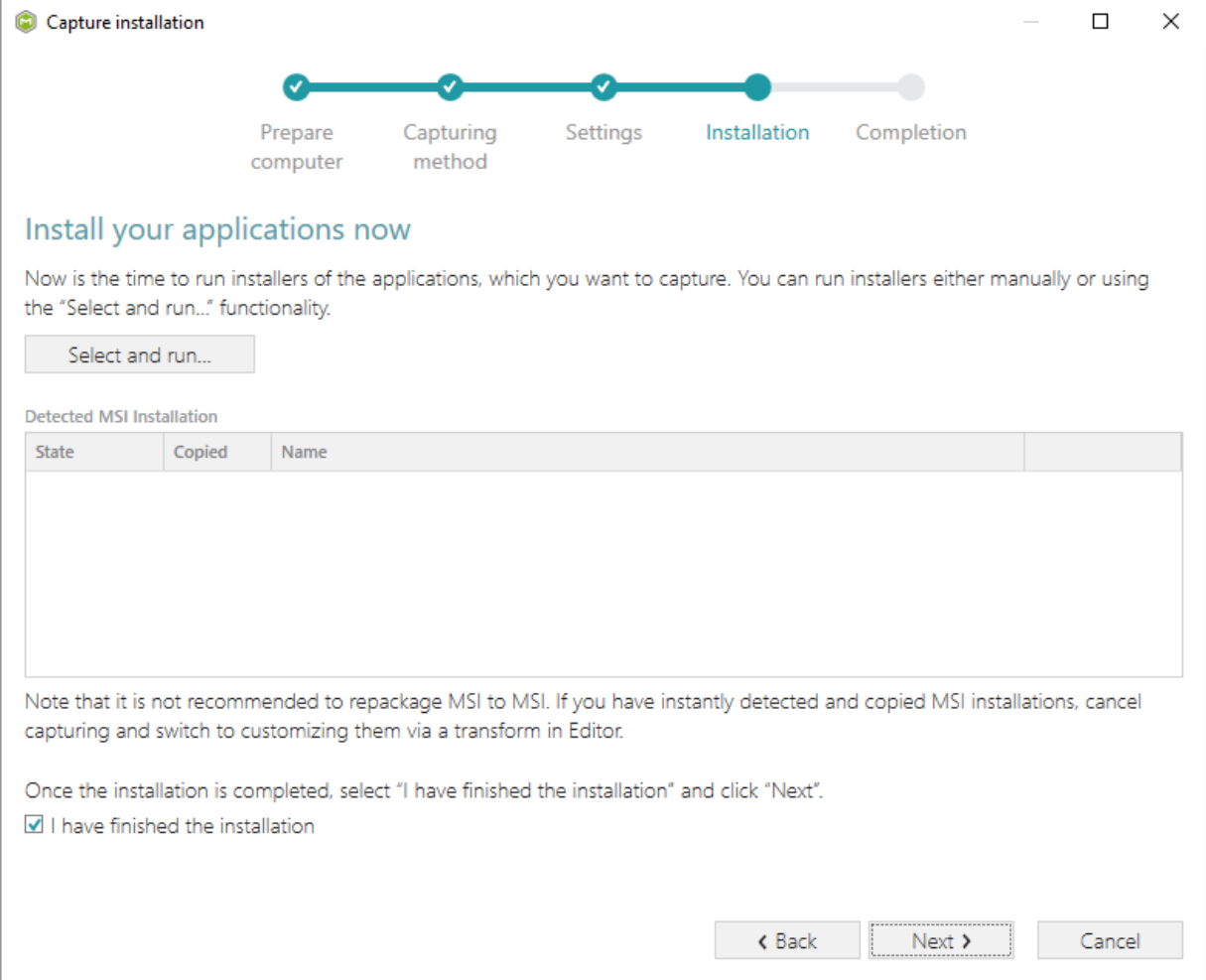
for the 'Users' group. Then click Apply and OK.



[15]. Verify the changed permission settings and click OK to close the window.



[16]. Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

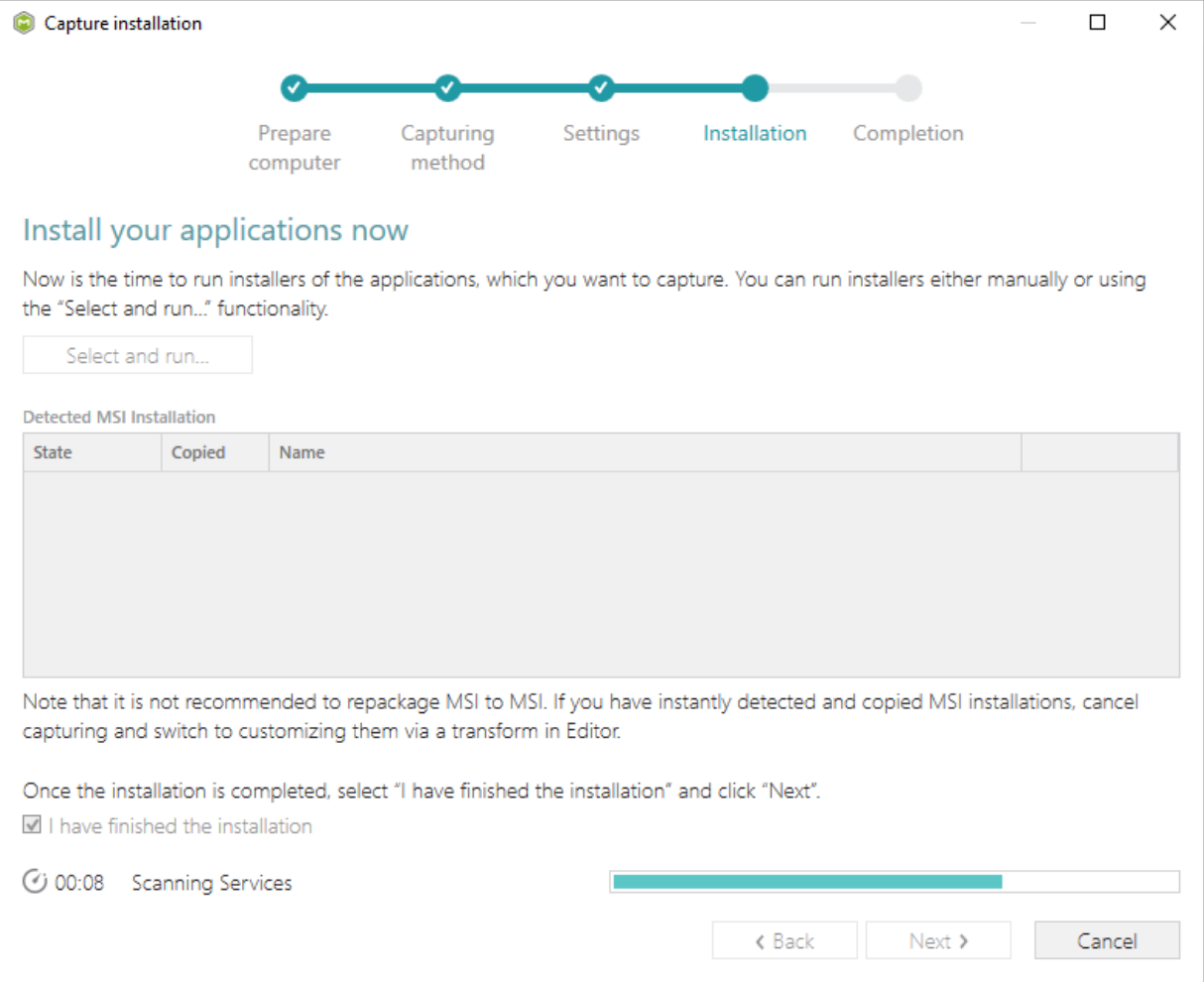
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back Next > Cancel

- [17]. Wait a little, while the capturing process is finishing, filtering captured data and creating the project.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

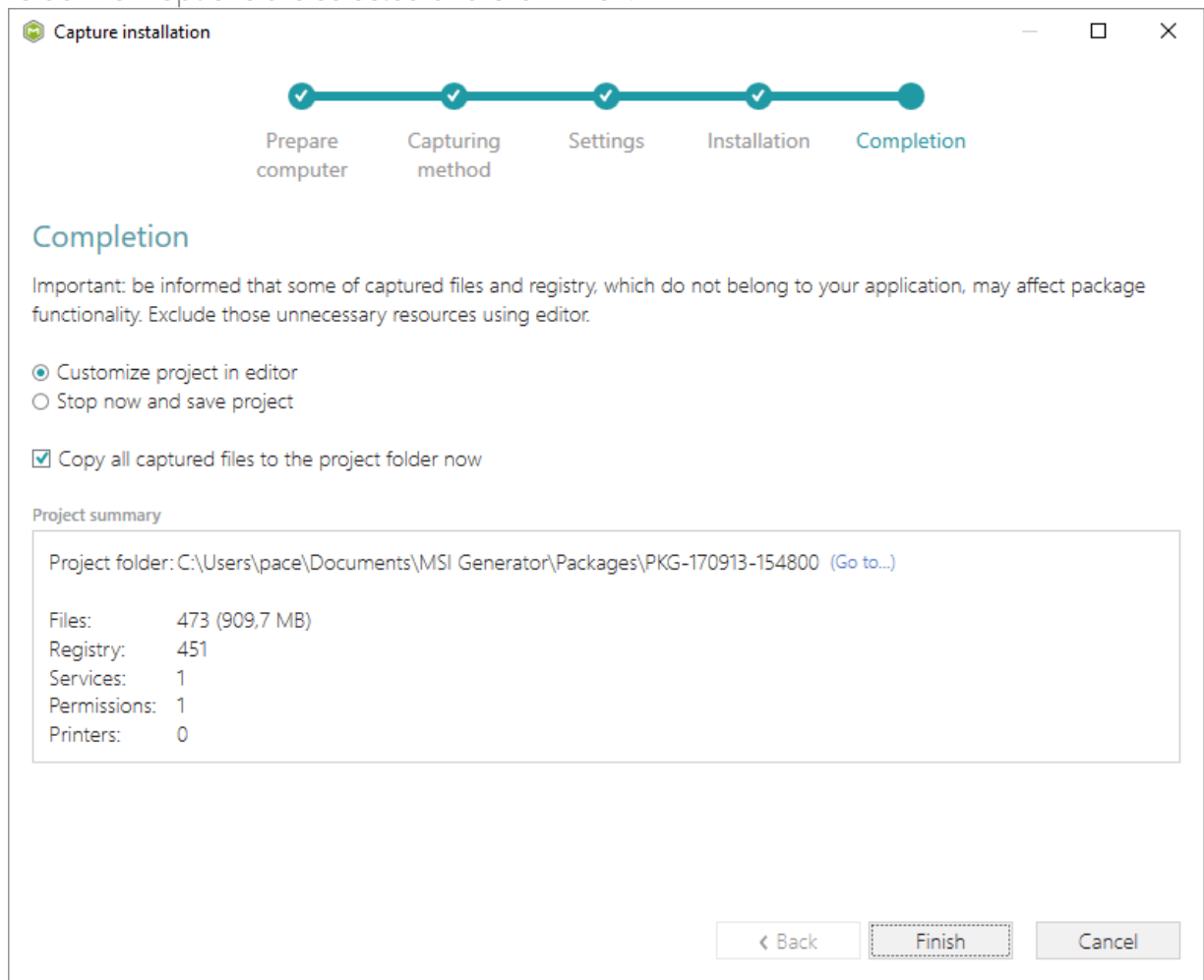
Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

00:08 Scanning Services

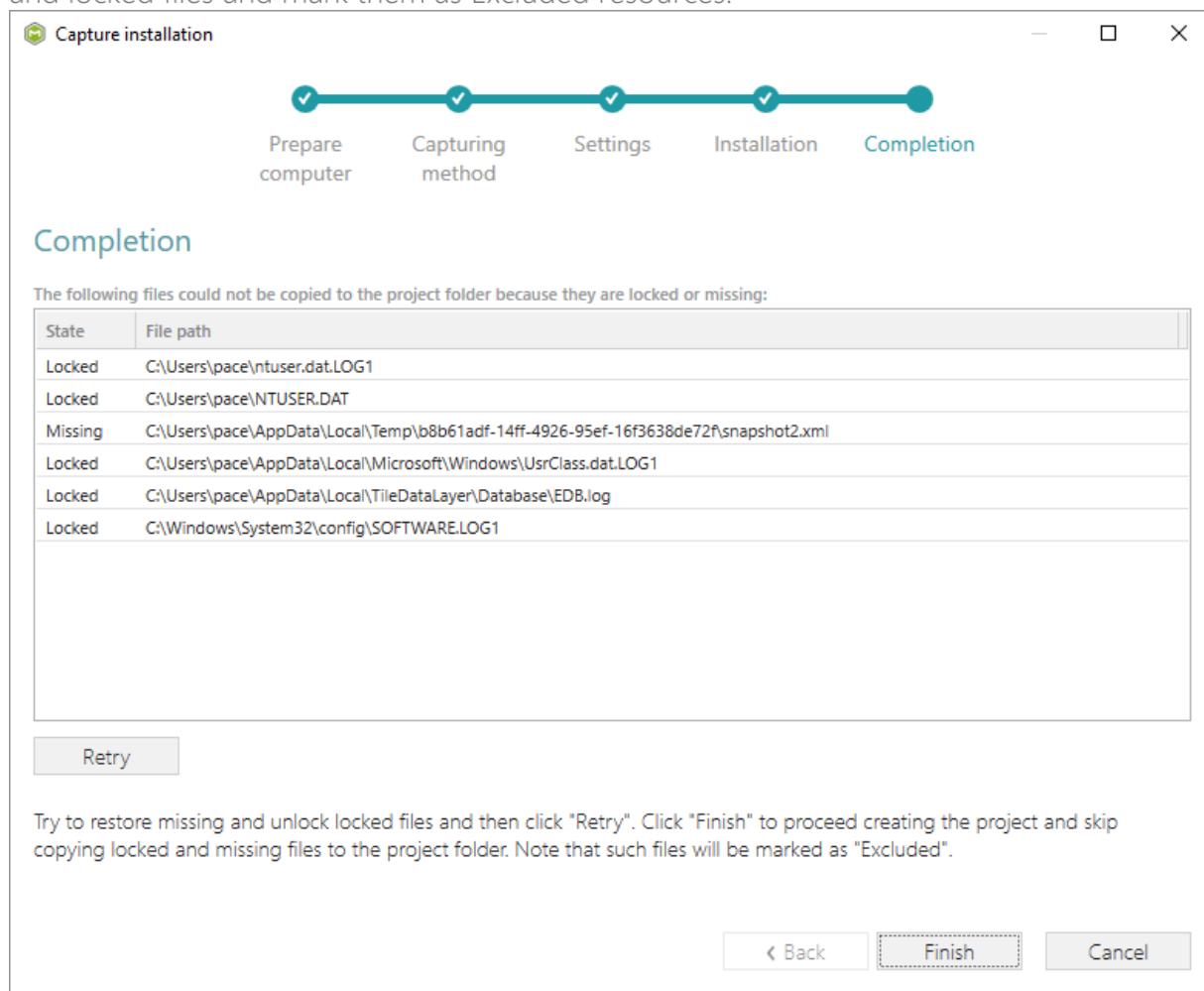
< Back Next > Cancel

- [18]. Leave selected the Customize project in editor and Copy all captured files to the project folder now options are selected and click Finish.



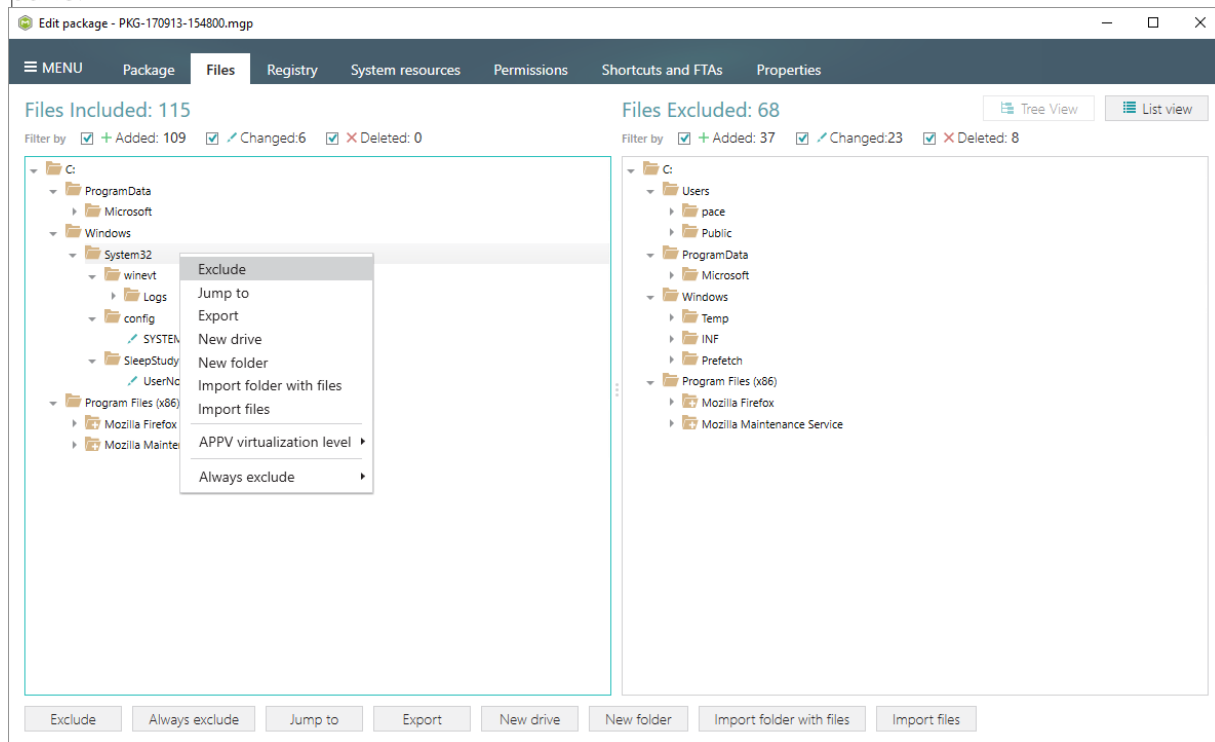
- [19]. The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing

and locked files and mark them as Excluded resources.

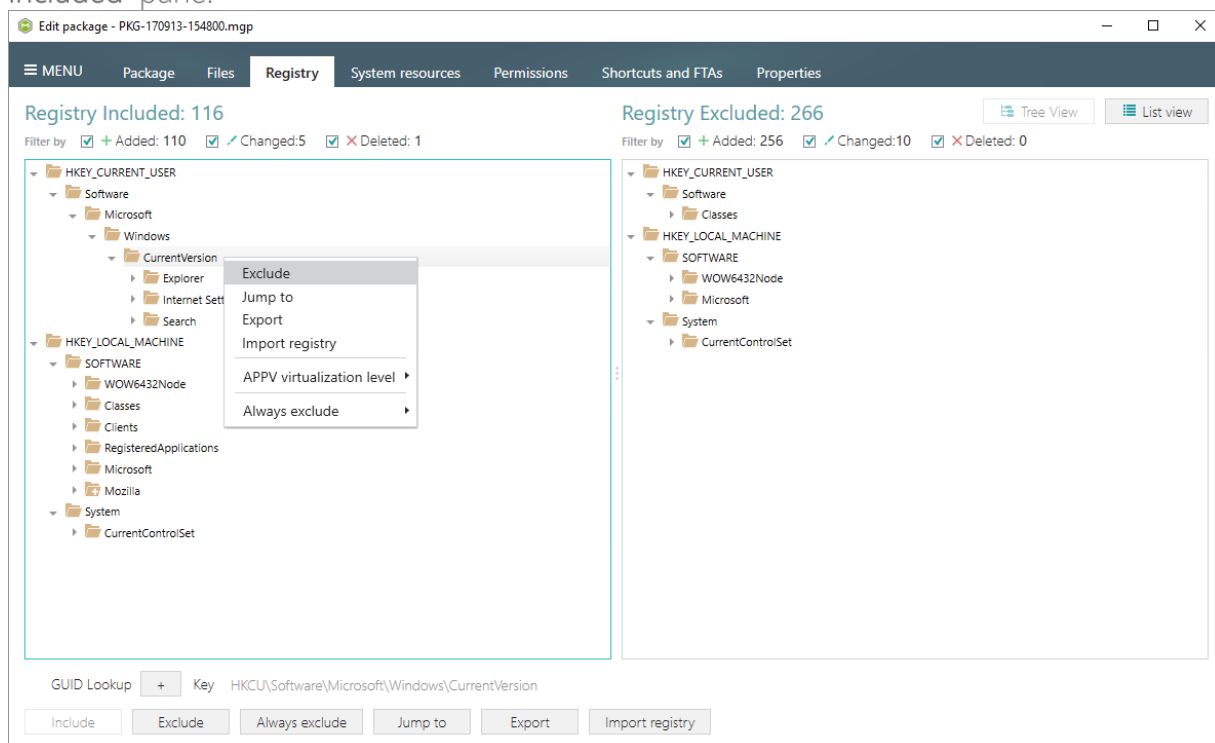


- [20]. Once the project is opened in the project editor, review the captured resources at the **Files**, **Registry**, **System** resources, **Permissions**, and **Shortcuts and FTAs** tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).
- [21]. In order to review and exclude unnecessary files or folders, go to the **Files** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included'

pane.

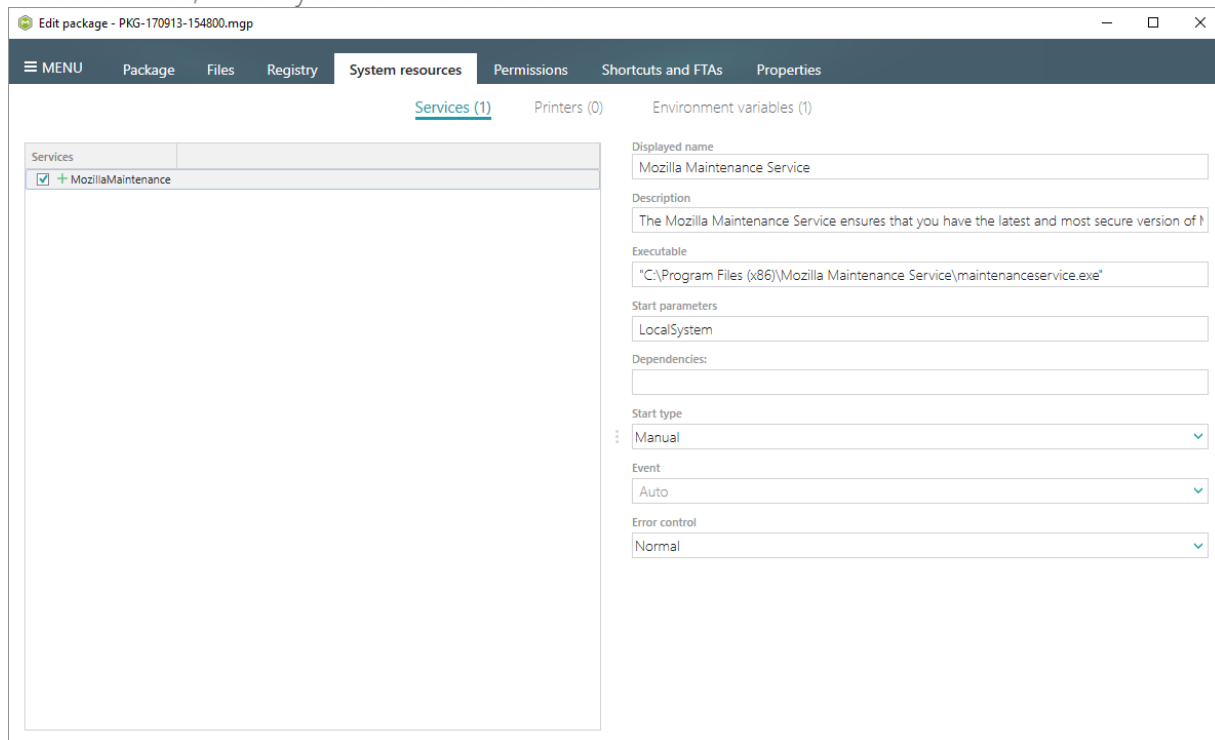


- [22]. In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

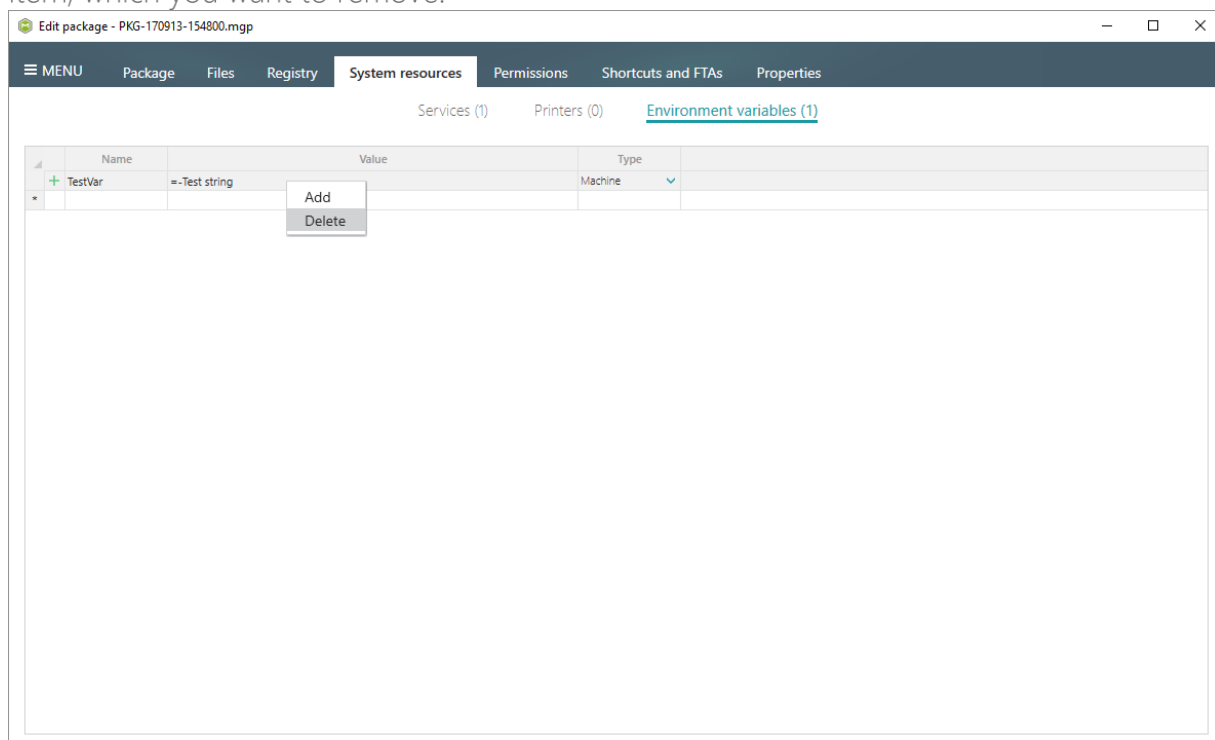


- [23]. In order to review and exclude unnecessary services, go to the System resources -> Services tab, and uncheck the checkbox, located before the service name in the list, for

those services, which you want to exclude.

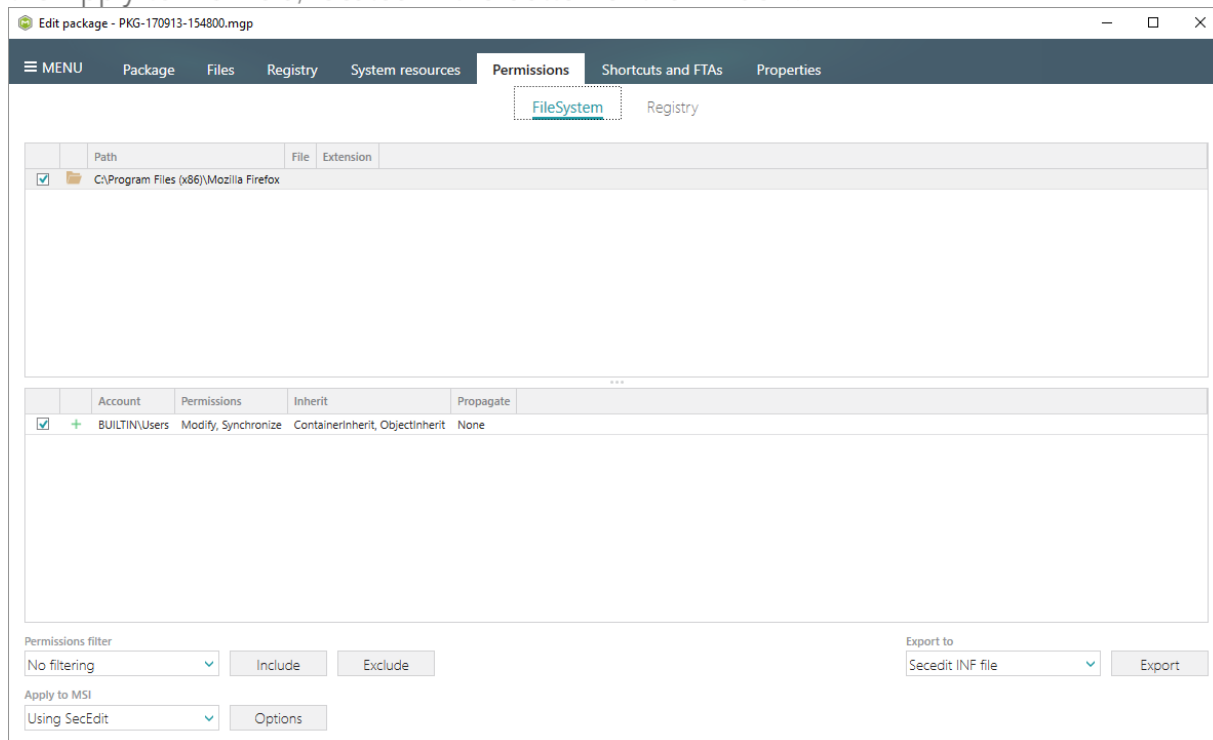


- [24]. In order to review and remove unnecessary Environment variables, go to the **System resources** -> **Environment variables** tab, and select **Delete** from the context menu of an item, which you want to remove.

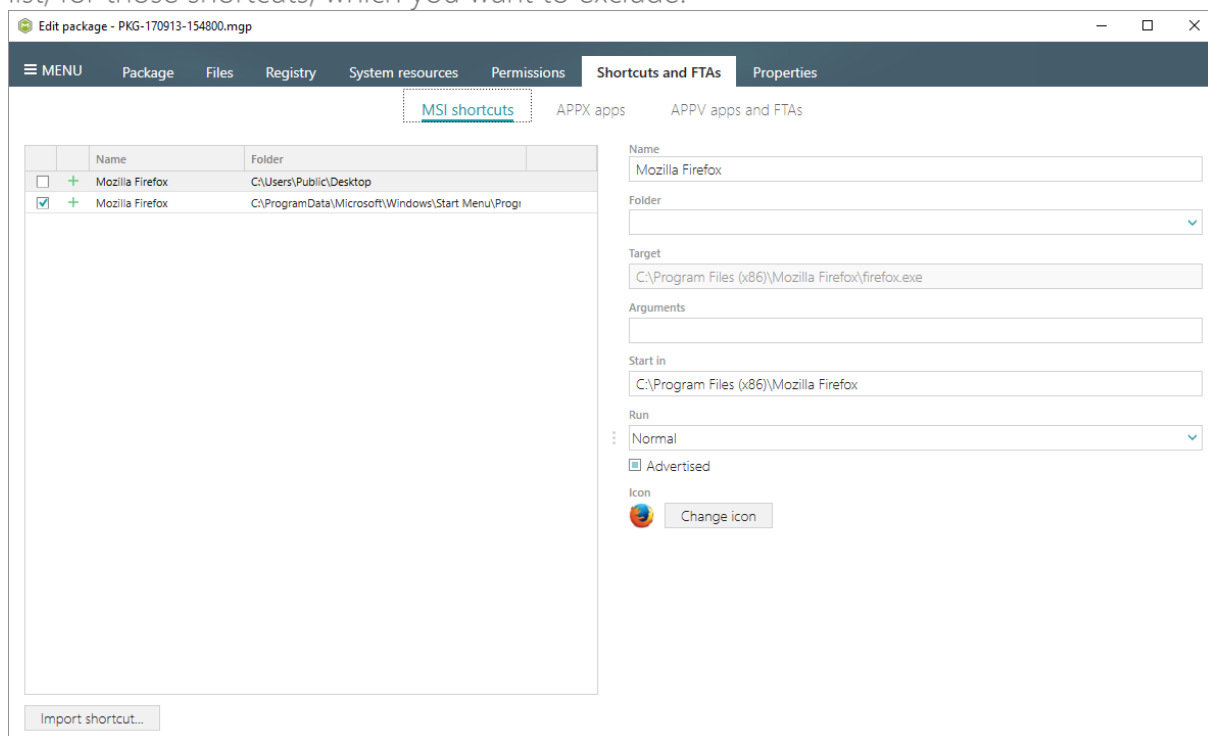


- [25]. On the **Permissions** tab you will find captured permissions for the file system and registry. For excluding unnecessary permission changes, either uncheck the checkbox, located before the path, for which permission changes were detected, or select **Do not apply** in

the Apply to MSI field, located in the bottom of the window.



- [26]. In order to review and exclude unnecessary shortcuts, go to the Shortcuts and FTAs -> MSI shortcuts tab, and uncheck the checkbox, located before the shortcut name in the list, for those shortcuts, which you want to exclude.



- [27]. Finally, to build an MSI package from the project, navigate to the Package -> MSI tab, update Application details such as name, publisher, version, language, select INSTALLDIR

Edit package - PKG-170913-154800.mgp

MENU

Package

Files

Registry

System resources

Permissions

Shortcuts and FTAs

Properties

MSI

MST

APPX

APPV

THINAPP

Application Details

Application name

Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher

Mozilla

Version

55.0.3

Product language

1033

Product code

New GUID...

Upgrade code

New GUID...

☒ Generate new codes when build MSI

Summary Information

Title

Installation Database

Subject

Author

Keywords

Install.MSI

Comments

This installer database contains the logic and data required to install <product name>.

Platform

Autodetect

Languages

0

MSI Package Options

MSI settings profile

default

Edit

MSI file name

C:\Users\pace\Documents\MSI Generator\Packages\PKG-1

Browse...

Go to...

MSI CodePage

0 Neutral

INSTALLDIR

C:\Program Files (x86)\Mozilla Firefox

Build log

Detected MSI installations

Open log

Type	Elapsed	Step

Elapsed time

00:00

Open MSI

Build MSI

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX APPV THINAPP

Application Details

Application name
Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher
Mozilla

Version
55.0.3

Product language
1033

Product code
{16315361-B140-4B5D-8C4E-4ADE3389ADD2} New GUID...

Upgrade code
{9DE9322A-35BD-47E5-BFF6-EAE8476B686B} New GUID...

☒ Generate new codes when build MSI

Summary Information

Title
Installation Database

Author

Subject

Keywords
Install.MSI

Comments
This installer database contains the logic and data required to install <product name>.

Platform
Autodetect

Languages
0

MSI Package Options

MSI settings profile
default Edit

MSI file name
C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 Browse... Go to...

MSI CodePage
0 Neutral

INSTALLDIR
C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations Open log

Type	Elapsed	Step
	00:00:43	Operation was completed successfully
	00:00:43	Writing data to the _Validation table
	00:00:43	Writing data to the CreateFolder table
	00:00:43	Writing data to the AdvtExecuteSequence table
	00:00:43	Writing data to the InstallExecuteSequence table
	00:00:43	Writing data to the CustomAction table
	00:00:43	Writing data to the MsiAssemblyName table
	00:00:42	Writing data to the MsiAssembly table
	00:00:37	Importing cabinet (CAB) file into the MSI - "PKG1.1.cab"
	00:00:37	Writing data to the Media table
	00:00:37	Creating CAB file(s) completed

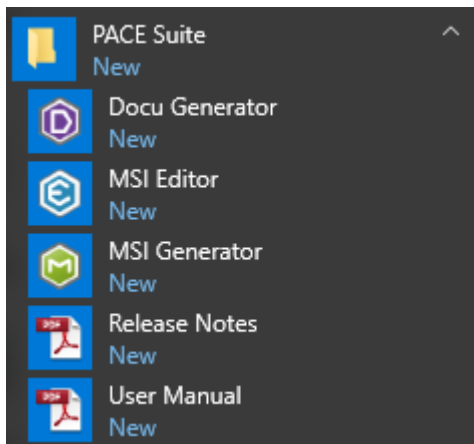
Elapsed time
00:00:43

Open MSI Build MSI

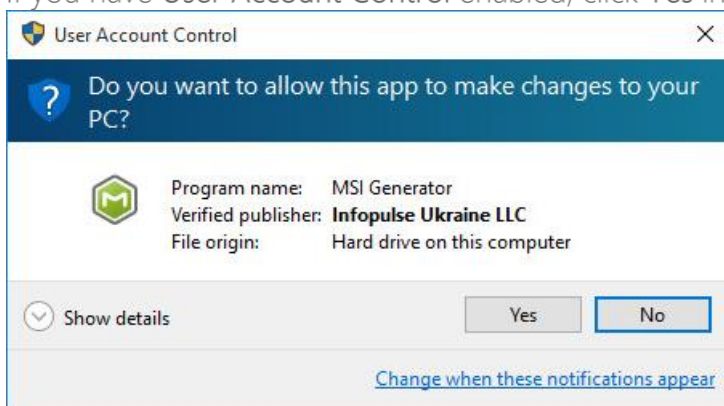
3.1.4 Capture System Changes to MSI

Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MSI package using MSI Generator. Along with files and registry, services and environment variables you, can capture file system and registry permission changes.

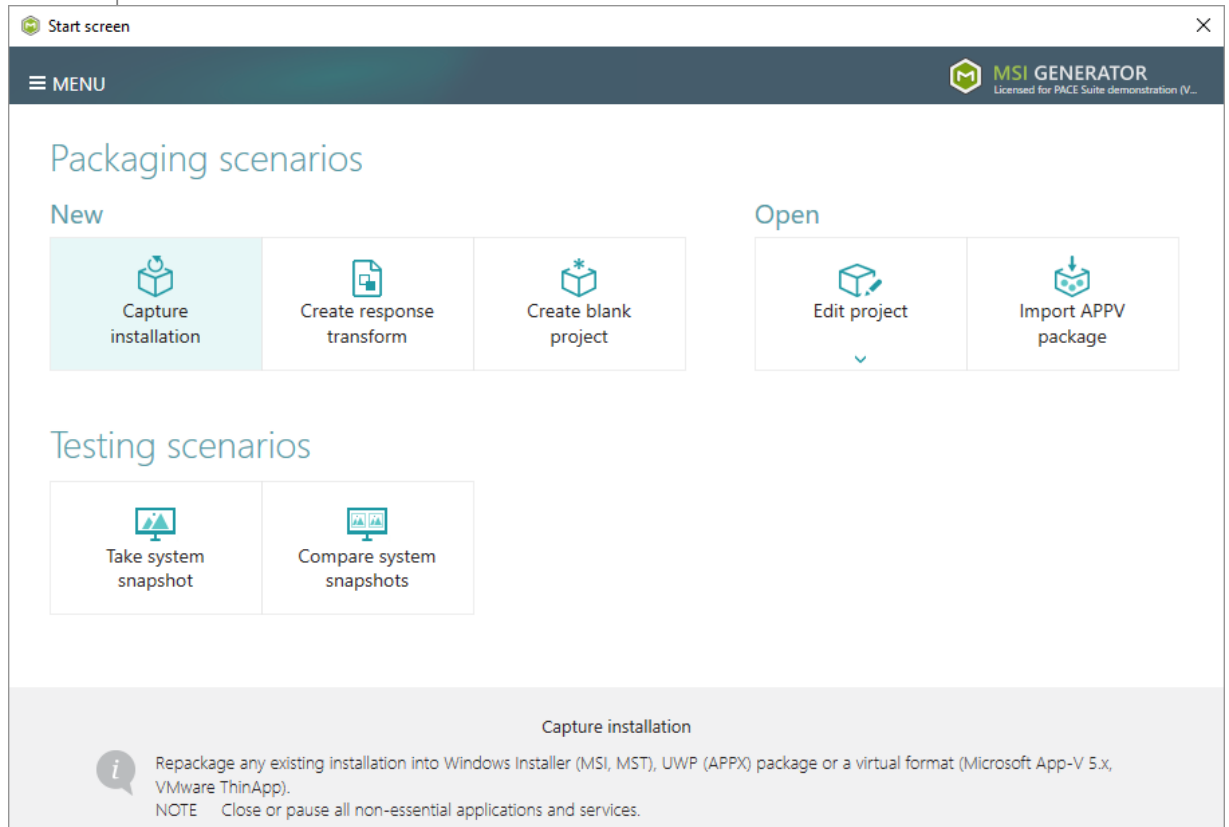
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



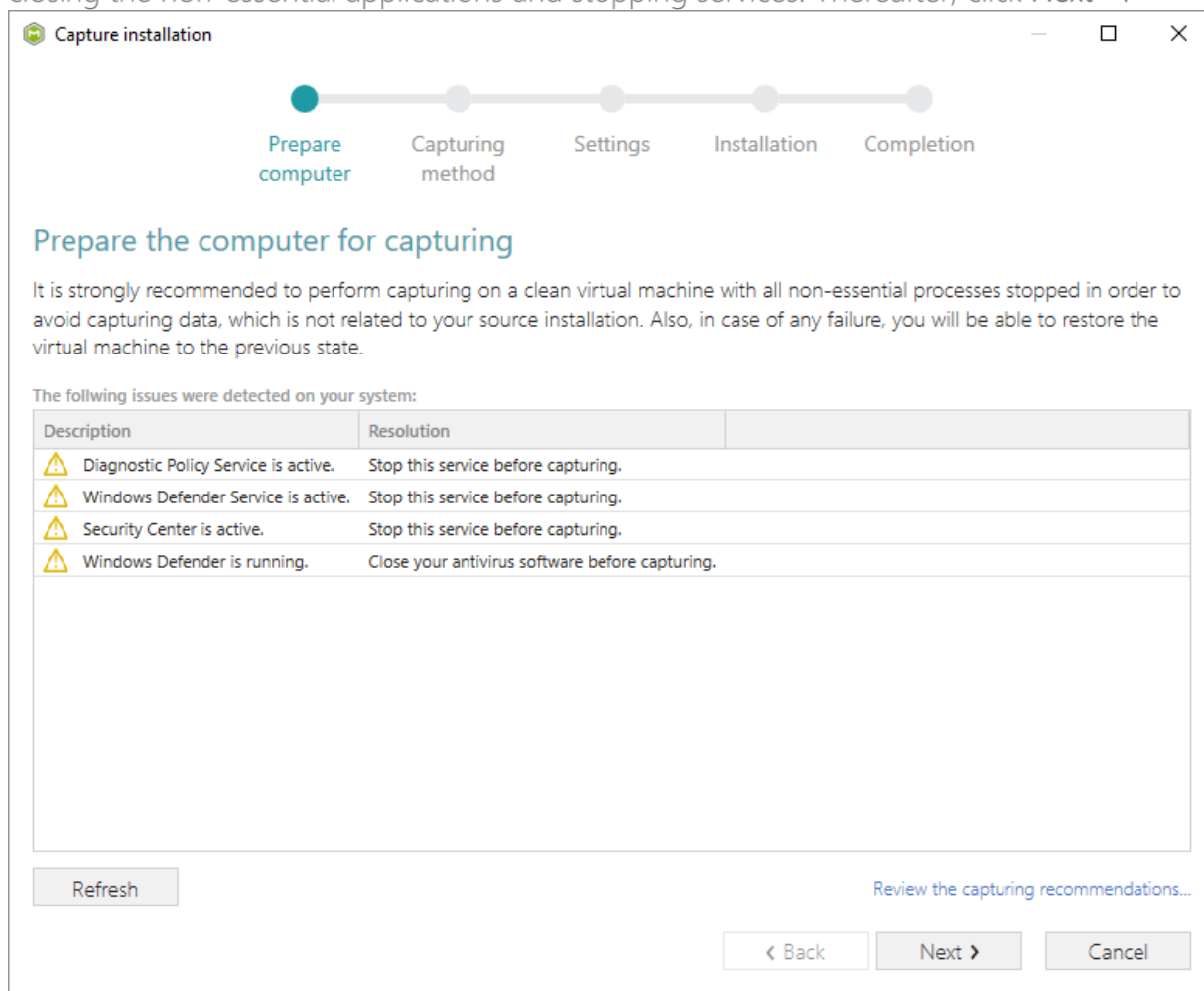
- [2]. If you have User Account Control enabled, click Yes in the opened window.



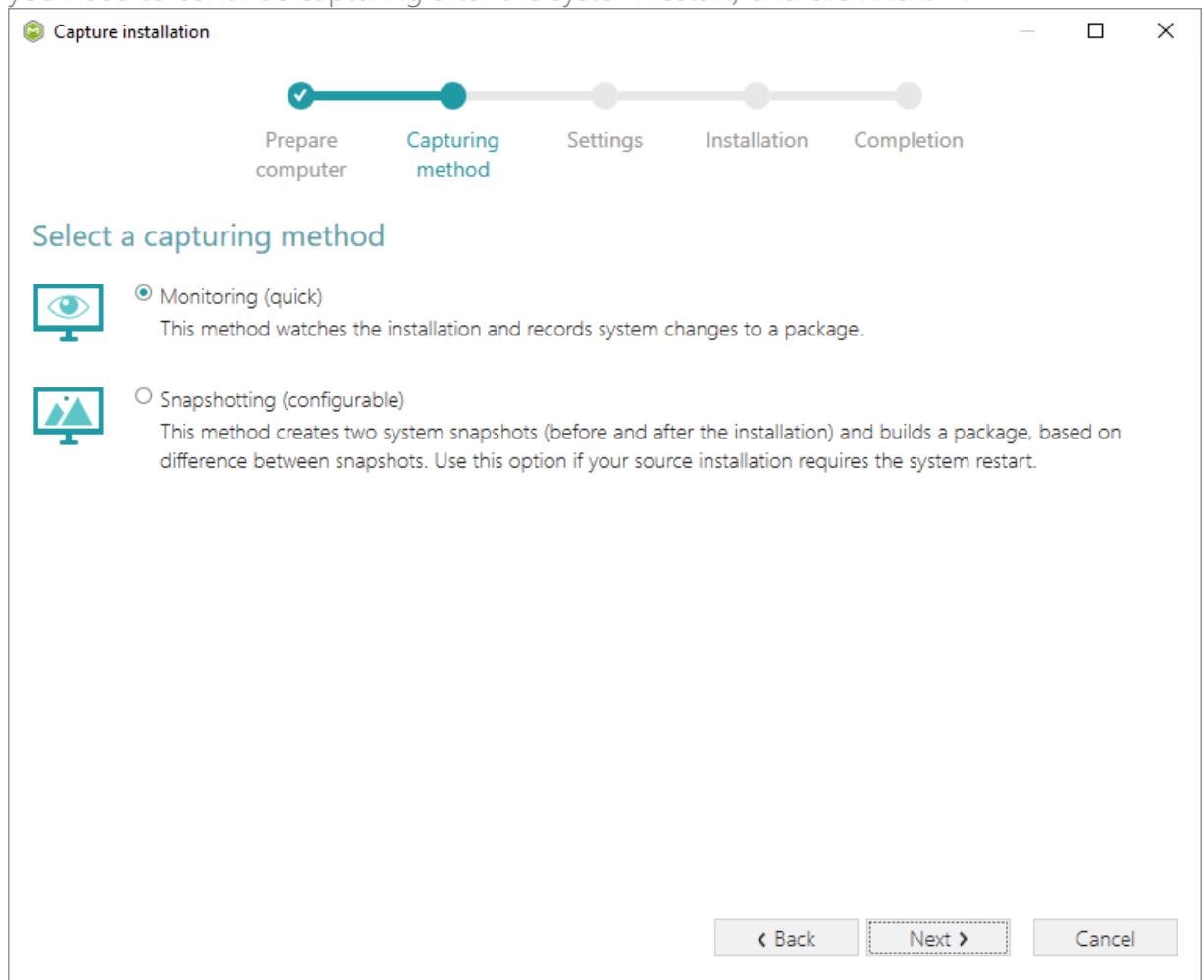
[3]. Click Capture installation.



- [4]. Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- [5]. Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- [6]. Here you can review and update package name, disable needless exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

Scanning areas

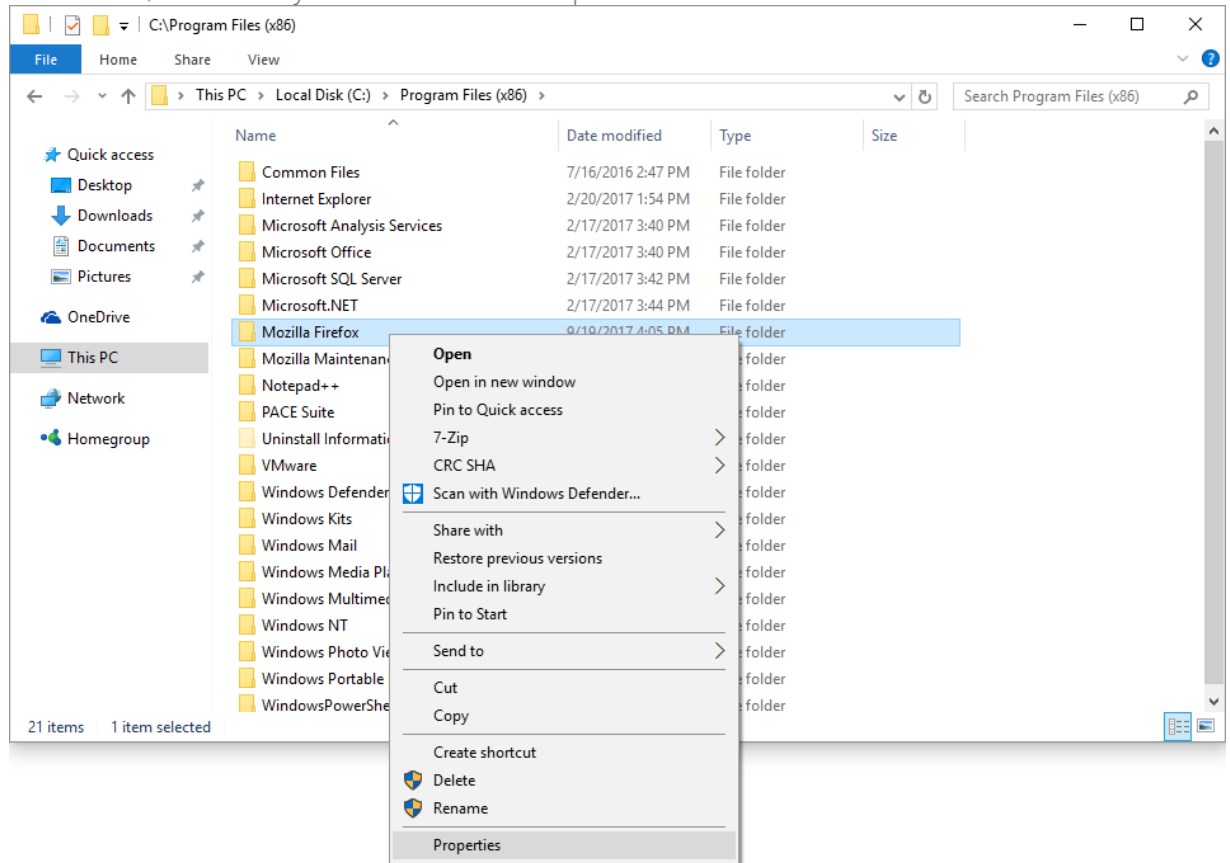
Application objects:

- ☒ Permissions
- ☒ Services
- ☒ Printers

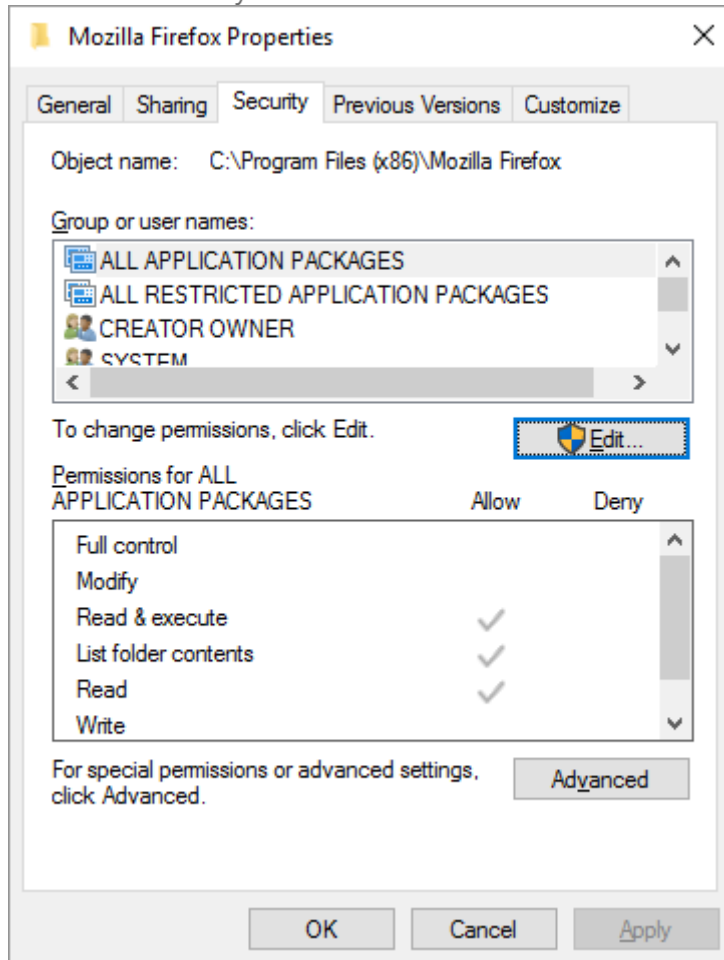
< Back **Next >** Cancel

- [7]. Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.
- [8]. If you additionally need to change the default permission settings on a folder or a file and include them to the package, select **Properties** from the Windows Explorer context menu

of a folder, on which you want to set new permissions.

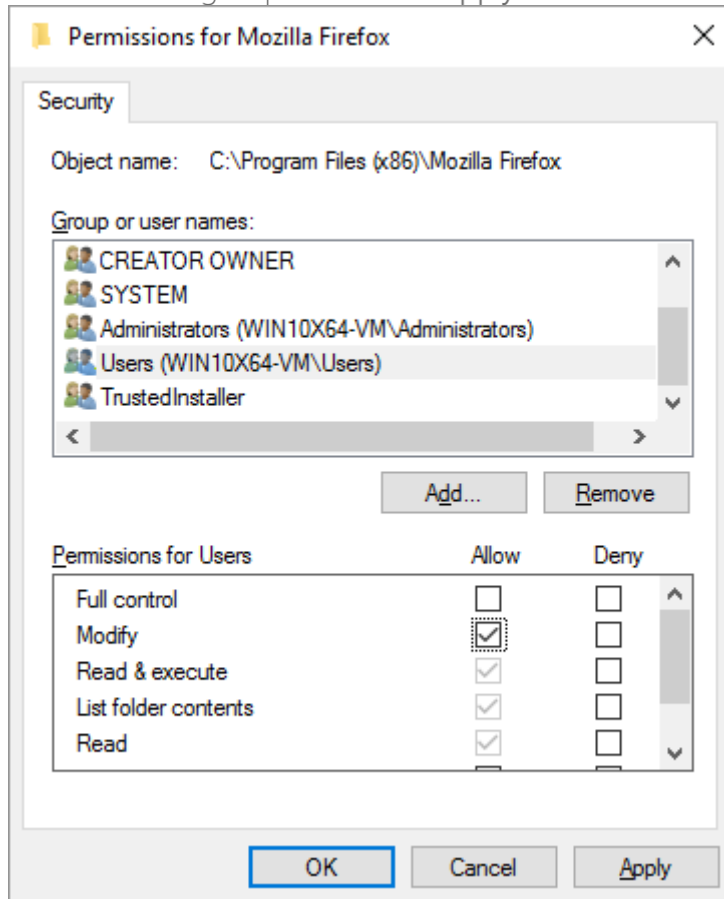


- [9]. Go to the Security tab and click Edit.

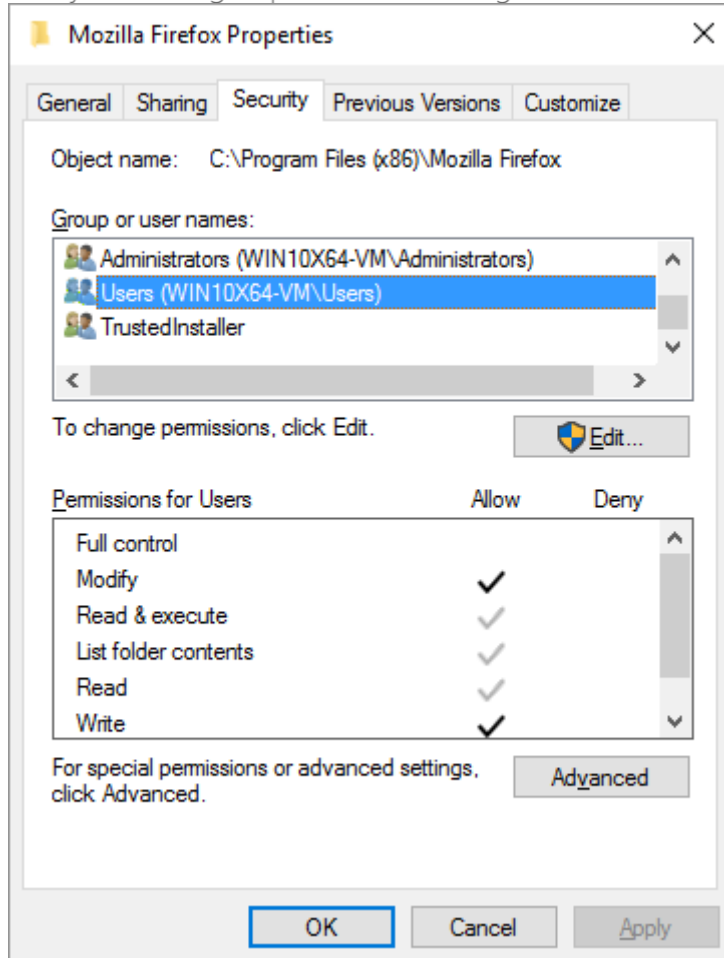


- [10]. Select a group or a user, for which you want to change the permissions and then select the necessary access rights. For example, let's set the 'Write' and the 'Modify' access rights

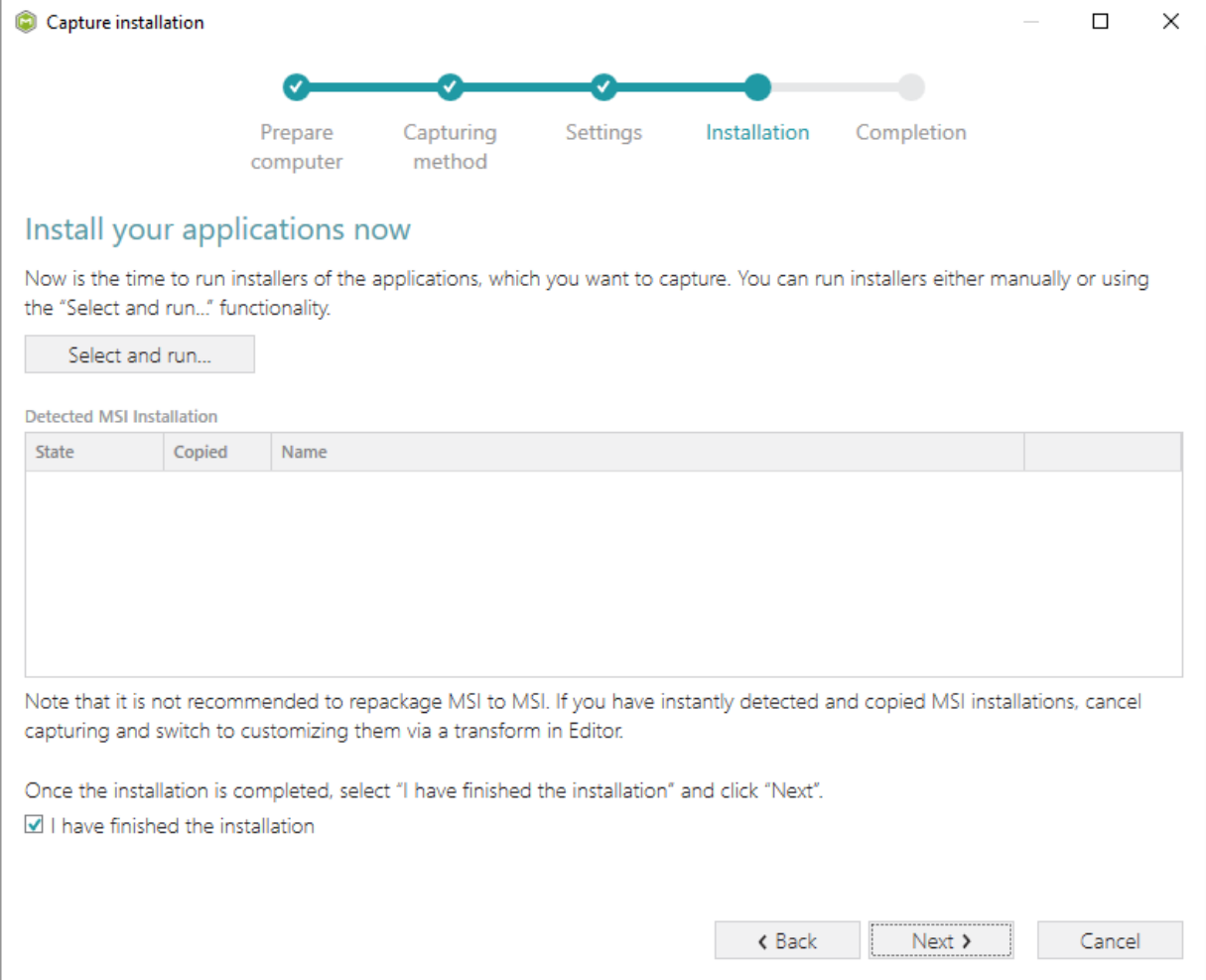
for the 'Users' group. Then click Apply and OK.



[11]. Verify the changed permission settings and click OK to close the window.



[12]. Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back Next > Cancel

- [13]. Wait a little, while the capturing process is finishing, filtering captured data and creating the project.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

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-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

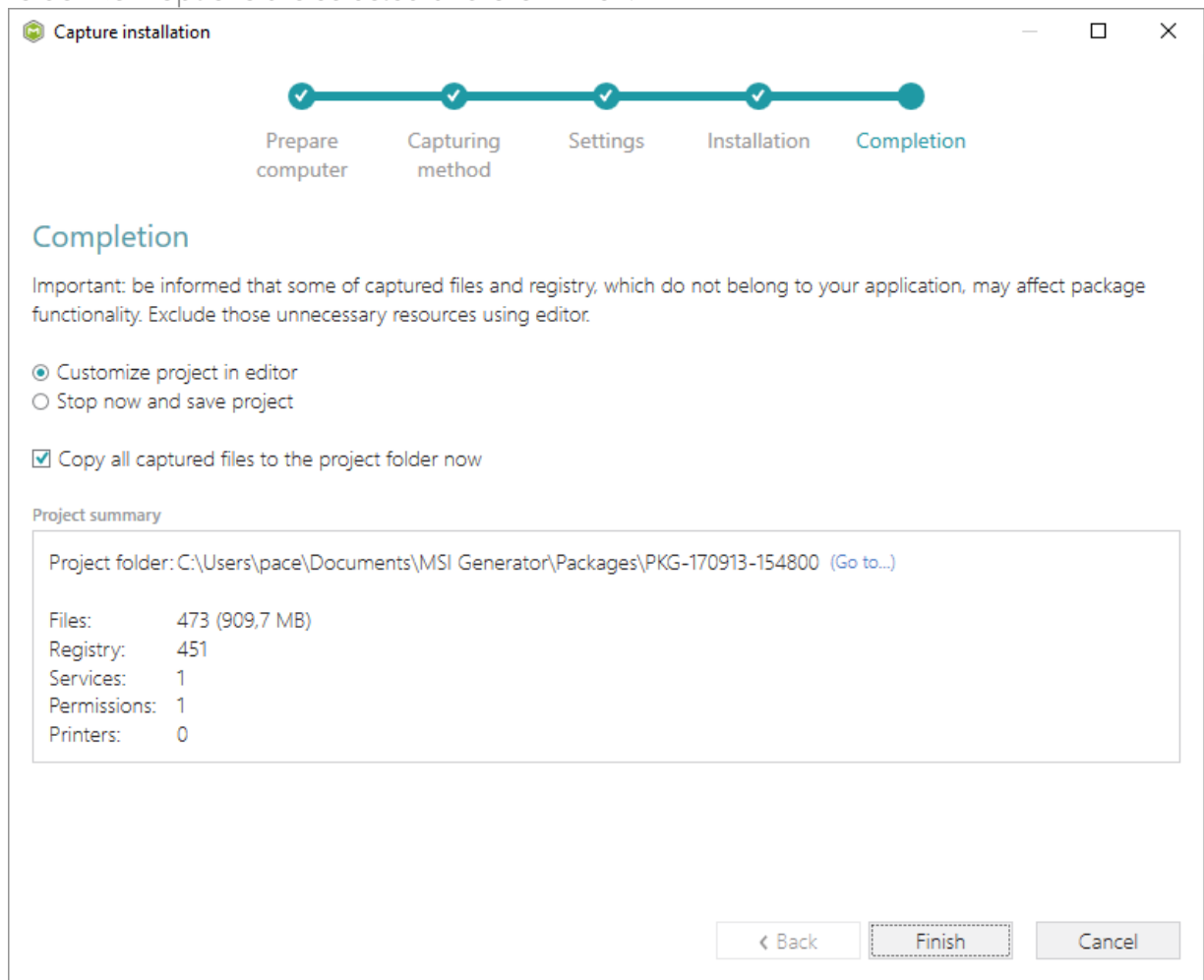
Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

00:08 Scanning Services

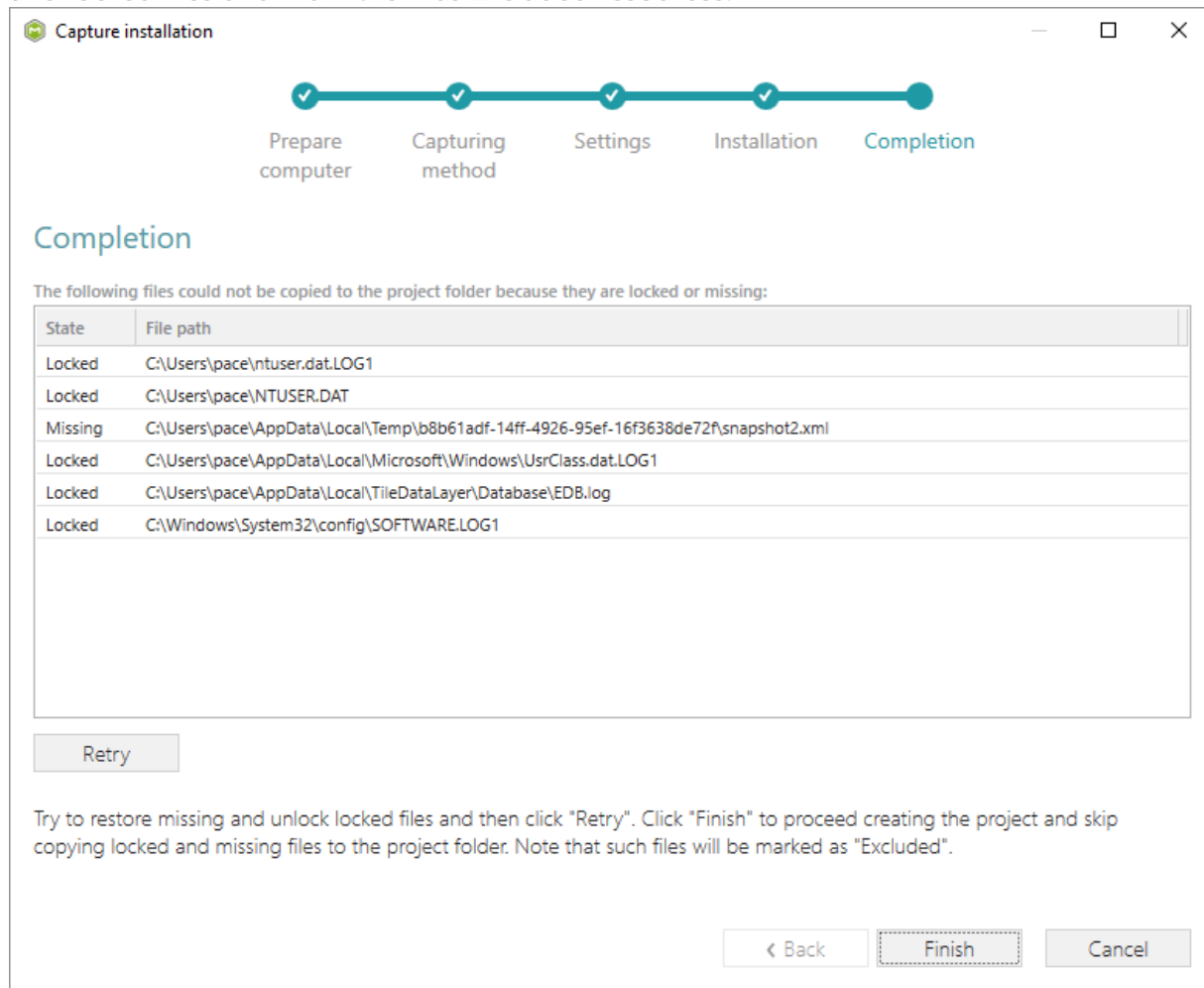
< Back Next > Cancel

- [14]. Leave selected the Customize project in editor and Copy all captured files to the project folder now options are selected and click Finish.



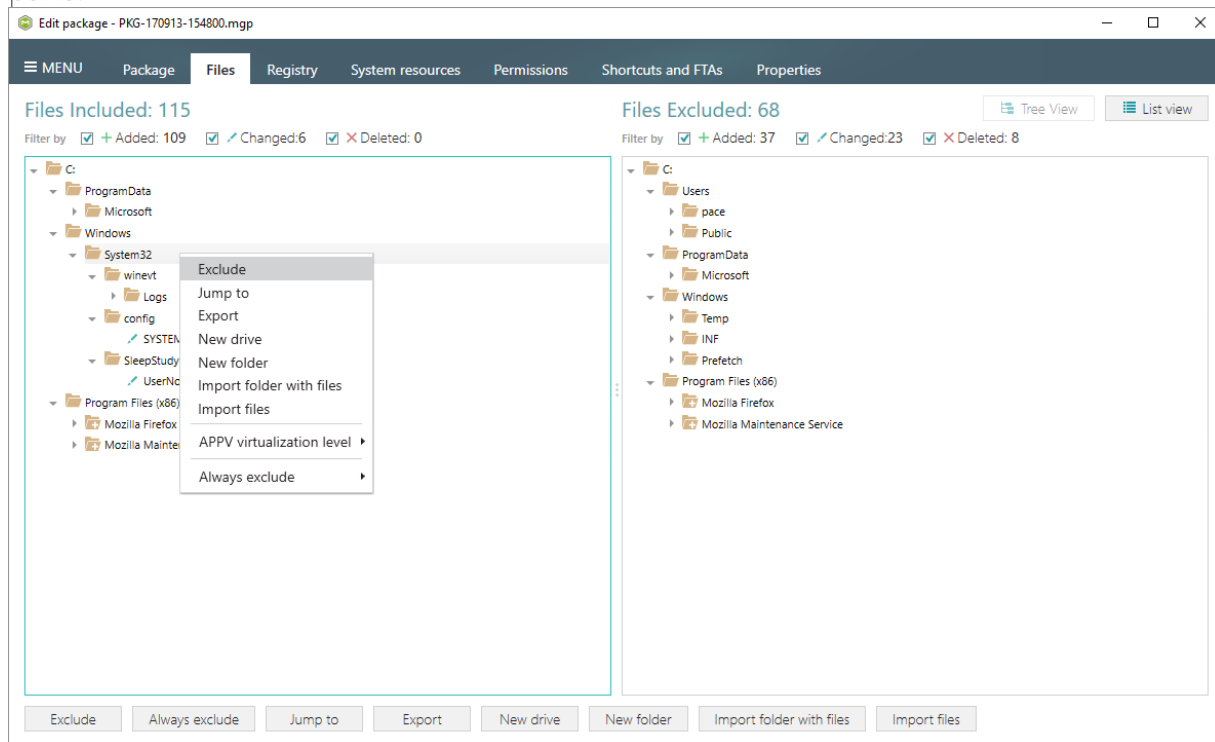
- [15]. The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing

and locked files and mark them as Excluded resources.

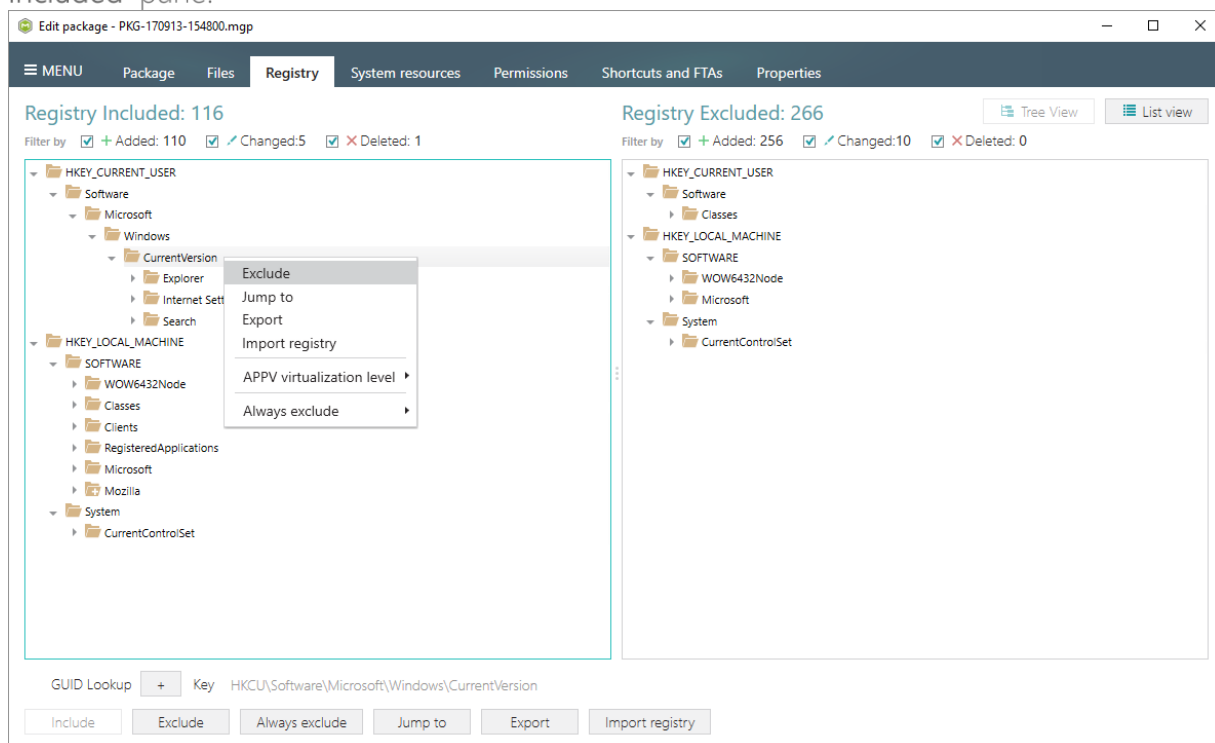


- [16]. Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).
- [17]. In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included'

pane.

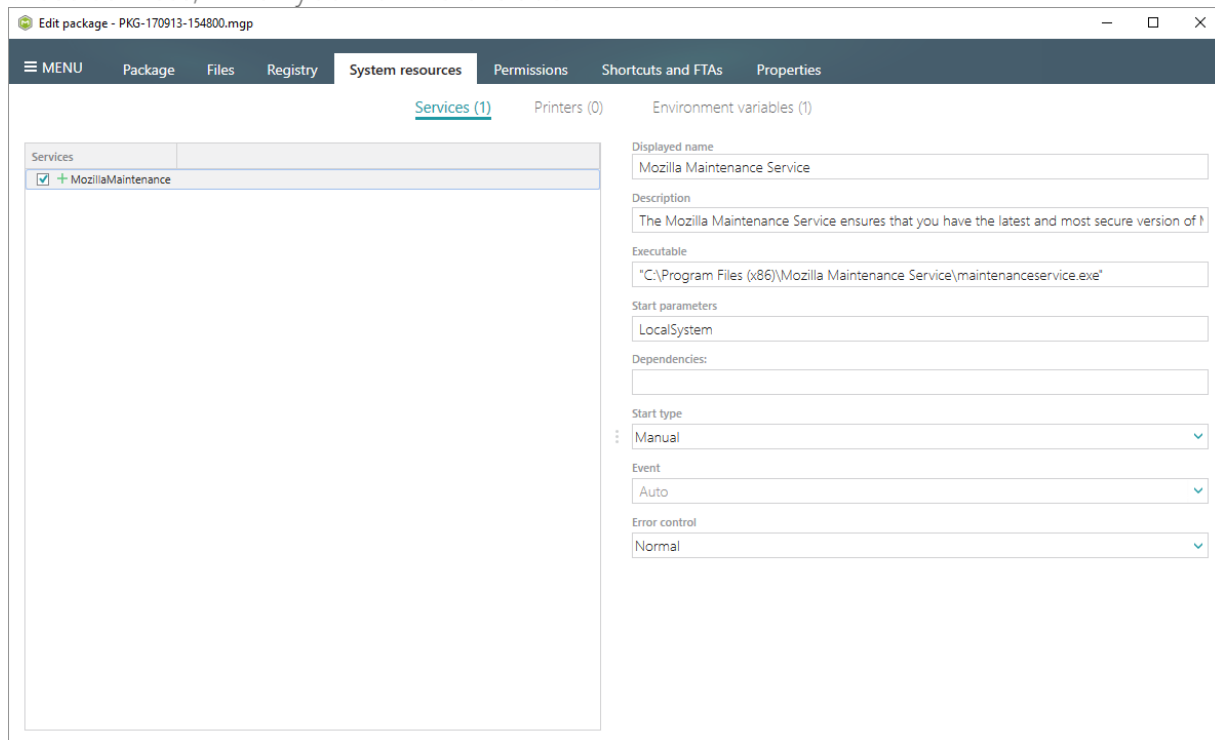


- [18]. In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

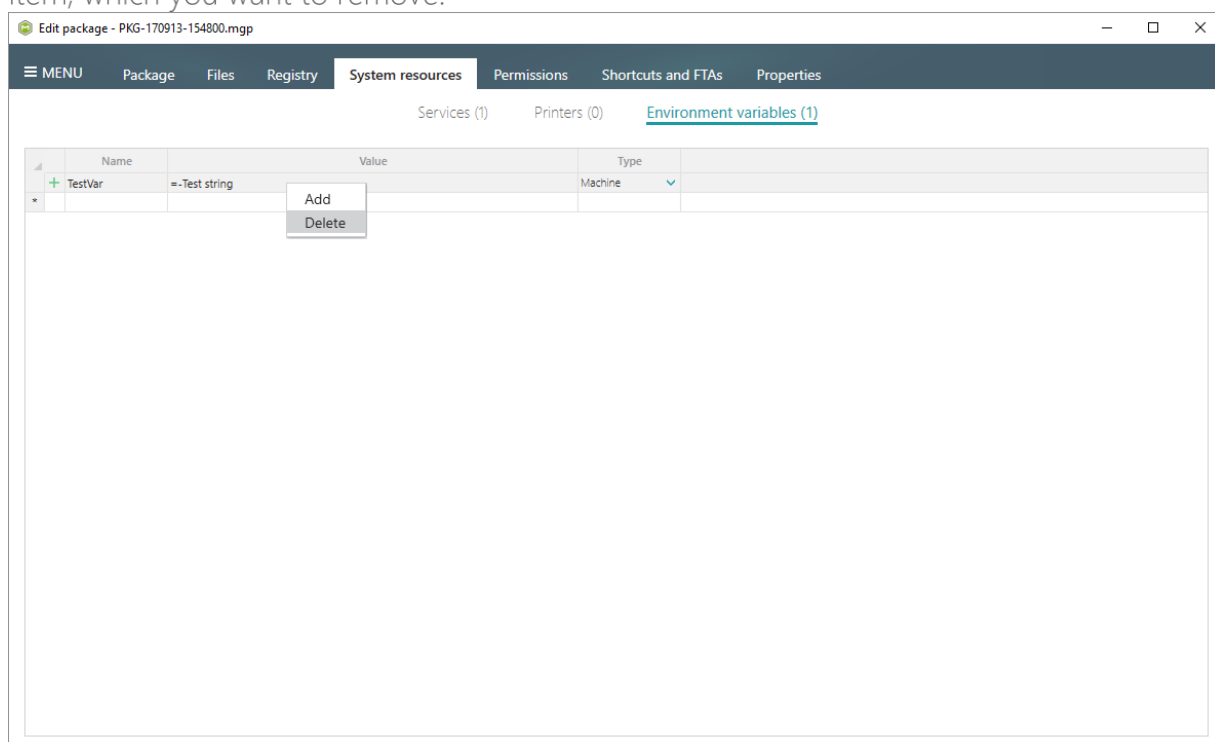


- [19]. In order to review and exclude unnecessary services, go to the System resources -> Services tab, and uncheck the checkbox, located before the service name in the list, for

those services, which you want to exclude.

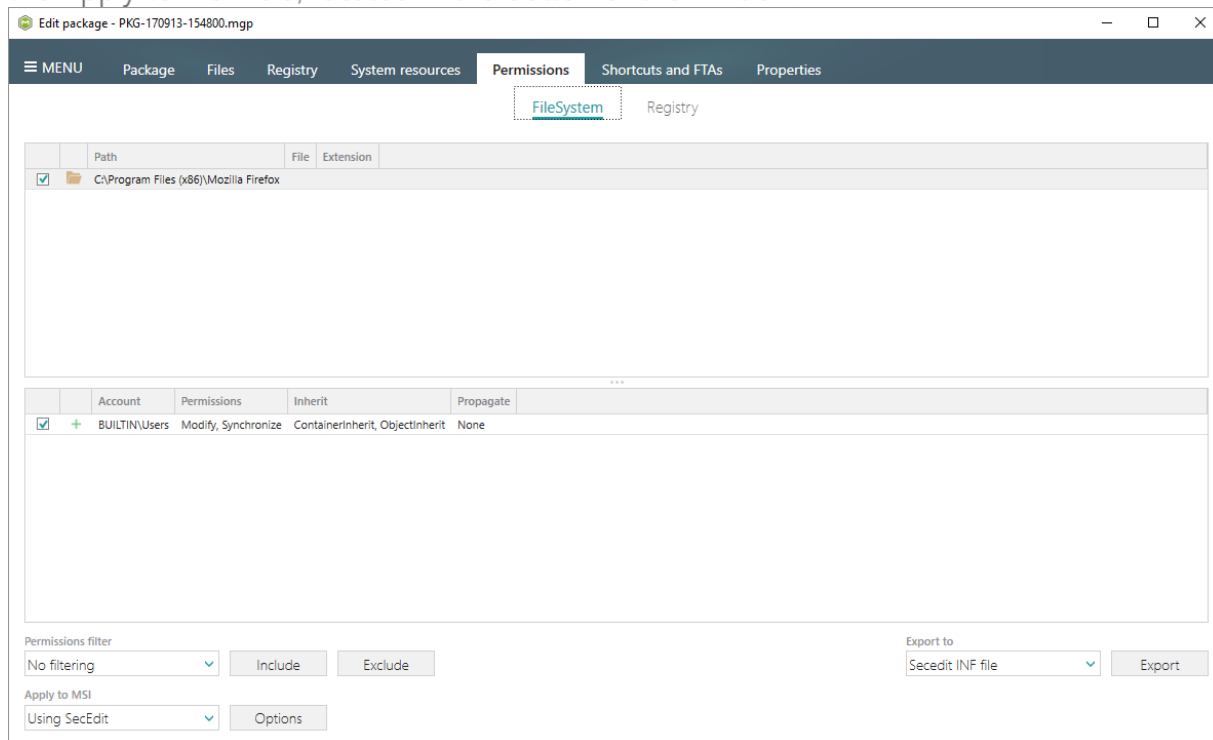


- [20]. In order to review and remove unnecessary Environment variables, go to the **System resources** -> **Environment variables** tab, and select **Delete** from the context menu of an item, which you want to remove.

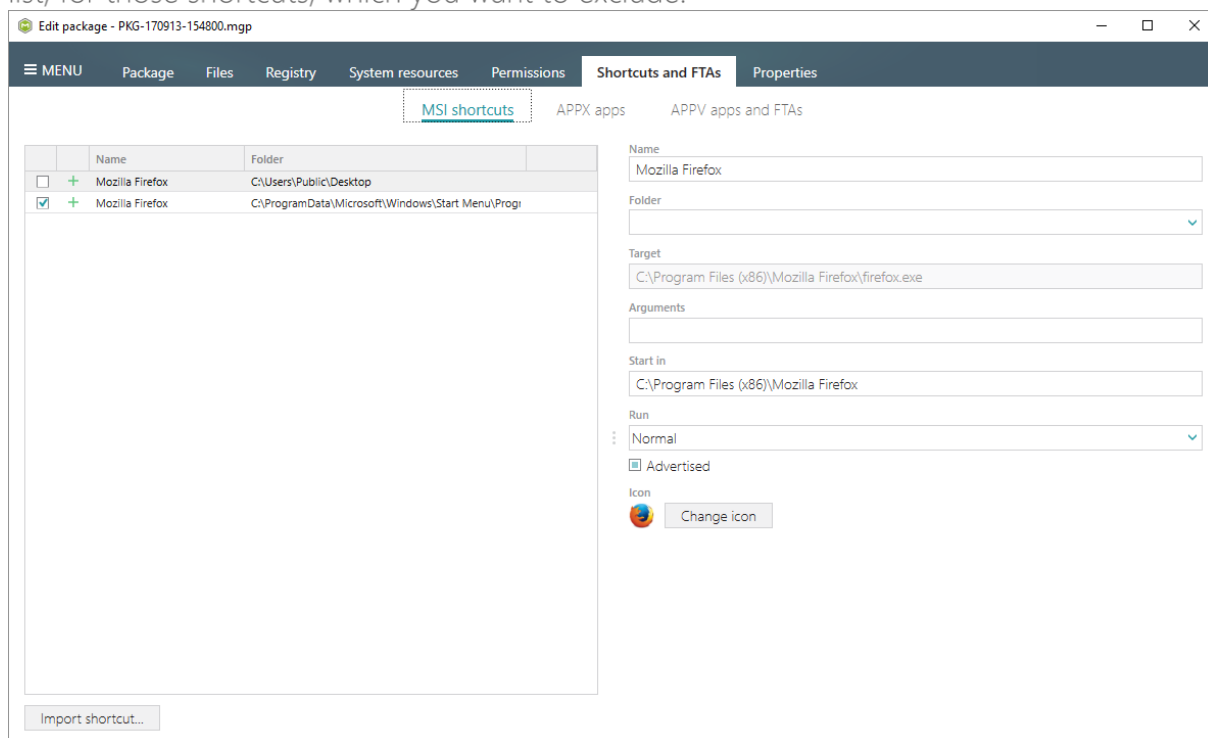


- [21]. On the **Permissions** tab you will find captured permissions for the file system and registry. For excluding unnecessary permission changes, either uncheck the checkbox, located before the path, for which permission changes were detected, or select **Do not apply** in

the Apply to MSI field, located in the bottom of the window.



- [22]. In order to review and exclude unnecessary shortcuts, go to the Shortcuts and FTAs -> MSI shortcuts tab, and uncheck the checkbox, located before the shortcut name in the list, for those shortcuts, which you want to exclude.



- [23]. Finally, to build an MSI package from the project, navigate to the Package -> MSI tab, update Application details such as name, publisher, version, language, select INSTALLDIR

and click Build MSI.

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: [New GUID...]

Upgrade code: [New GUID...]

☒ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject: []

Author: [] Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Autodetect Languages: 0

MSI Package Options

MSI settings profile: default [Edit]

MSI file name: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

MSI CodePage: 0 Neutral

INSTALLDIR: C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations [Open log]

Type	Elapsed	Step
------	---------	------

Elapsed time: 00:00 [Open MSI] [Build MSI]

[24]. Once the package is built, click Go to..., located next to the MSI file name field, to open the package containing folder in Windows Explorer.

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: {16315361-B140-4B5D-8C46-4ADE3389ADD2} [New GUID...]

Upgrade code: {9DE9322A-35BD-47E5-BFF6-EAE8476B686B} [New GUID...]

☒ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject: []

Author: [] Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Autodetect Languages: 0

MSI Package Options

MSI settings profile: default [Edit]

MSI file name: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

MSI CodePage: 0 Neutral

INSTALLDIR: C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations [Open log]

Type	Elapsed	Step
	00:00:43	Operation was completed successfully
	00:00:43	Writing data to the _Validation table
	00:00:43	Writing data to the CreateFolder table
	00:00:43	Writing data to the AdvtExecuteSequence table
	00:00:43	Writing data to the InstallExecuteSequence table
	00:00:43	Writing data to the CustomAction table
	00:00:43	Writing data to the MsiAssemblyName table
	00:00:42	Writing data to the MsiAssembly table
	00:00:37	Importing cabinet (CAB) file into the MSI - "PKG1.1.cab"
	00:00:37	Writing data to the Media table
	00:00:37	Creating CAB file(s) completed

Elapsed time: 00:00:43 [Open MSI] [Build MSI]

3.2 New MST

Choose a scenario that better suits your needs:

- **Create Blank MST**, described in section 3.2.1
Create a new empty transform file (MST) for your MSI package in MSI Editor. All changes, made to the opened MSI database, will be saved to the MST.
- **Create Response MST**, described in section 3.2.2
Capture all your inputs and changes, made to the Windows Installer UI dialogs of the MSI installation, and save them to the MST file using MSI Generator. The MSI installation will be simulated, which allows capturing all necessary changes very promptly and without affecting your real system.
- **Capture System Changes to MST**, described in section 3.2.3
Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MST file, generated against the selected MSI package using MSI Generator. Along with files and registry, services and environment variables you, can capture file system and registry permission changes.

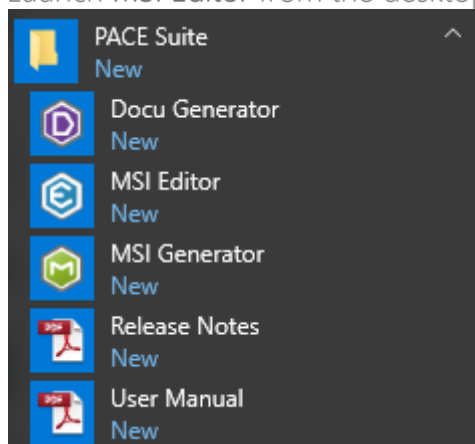
3.2.1 Create Blank MST

Create a new empty transform file (MST) for your MSI package in MSI Editor. All changes, made to the opened MSI database, will be saved to the MST.

NOTE PACE Suite supports two scenarios of saving changes to MST:

1. Open MSI -> **create MST** -> change MSI resources -> Save. (described below)
2. Open MSI -> change MSI resources -> **Save as MST**.

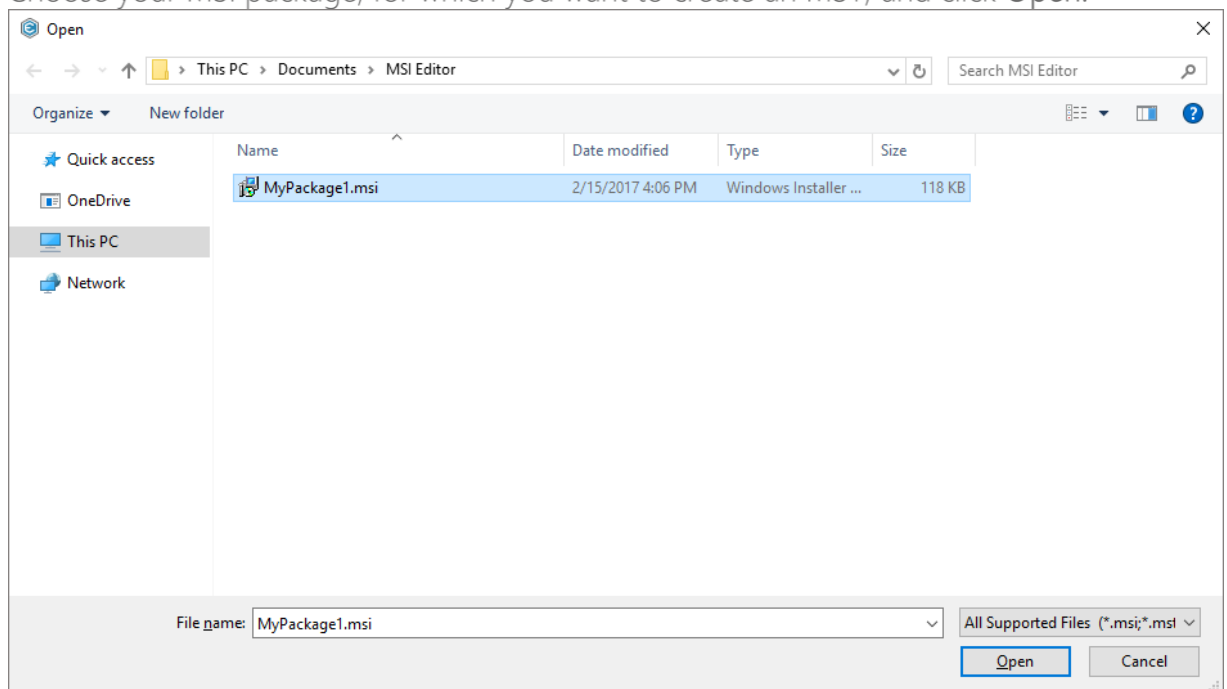
[1]. Launch MSI Editor from the desktop or the start menu shortcut.



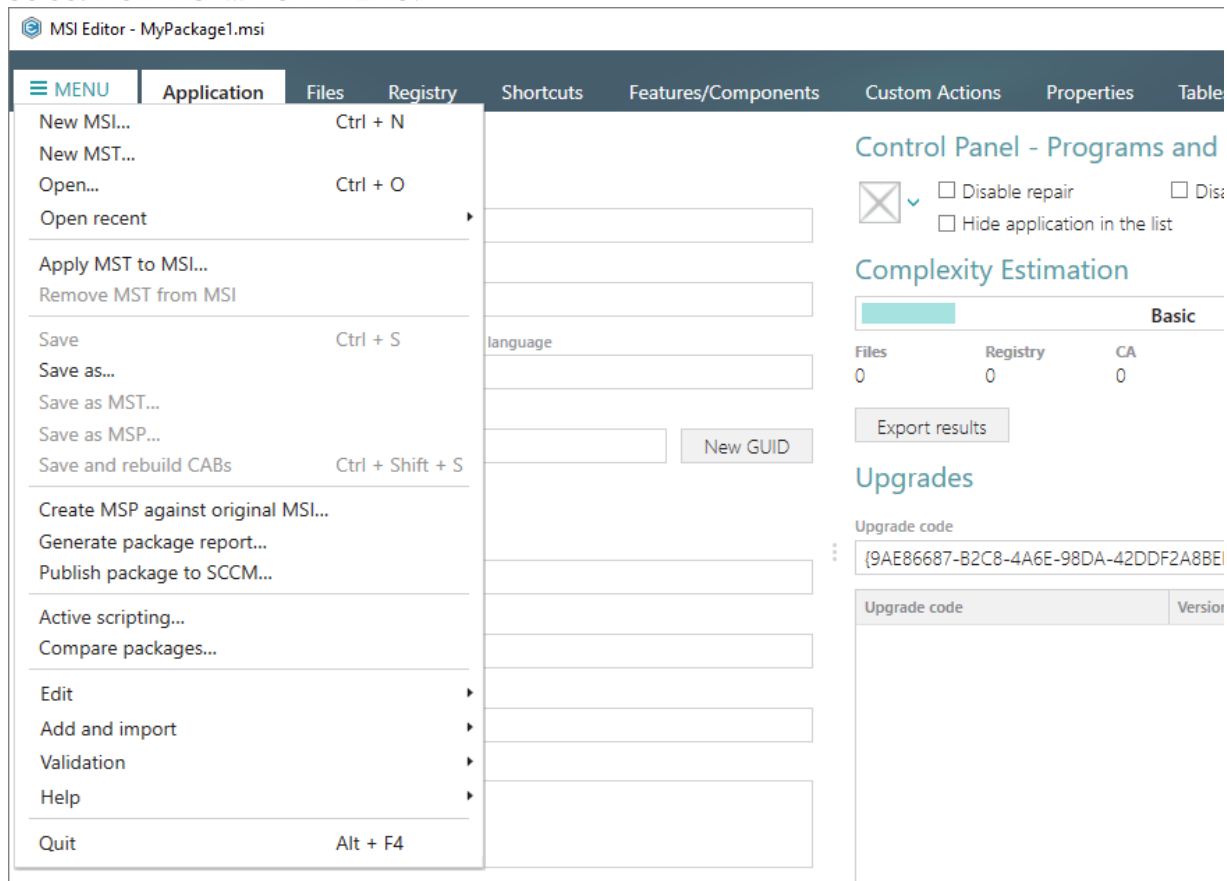
[2]. Select Open... from MENU.



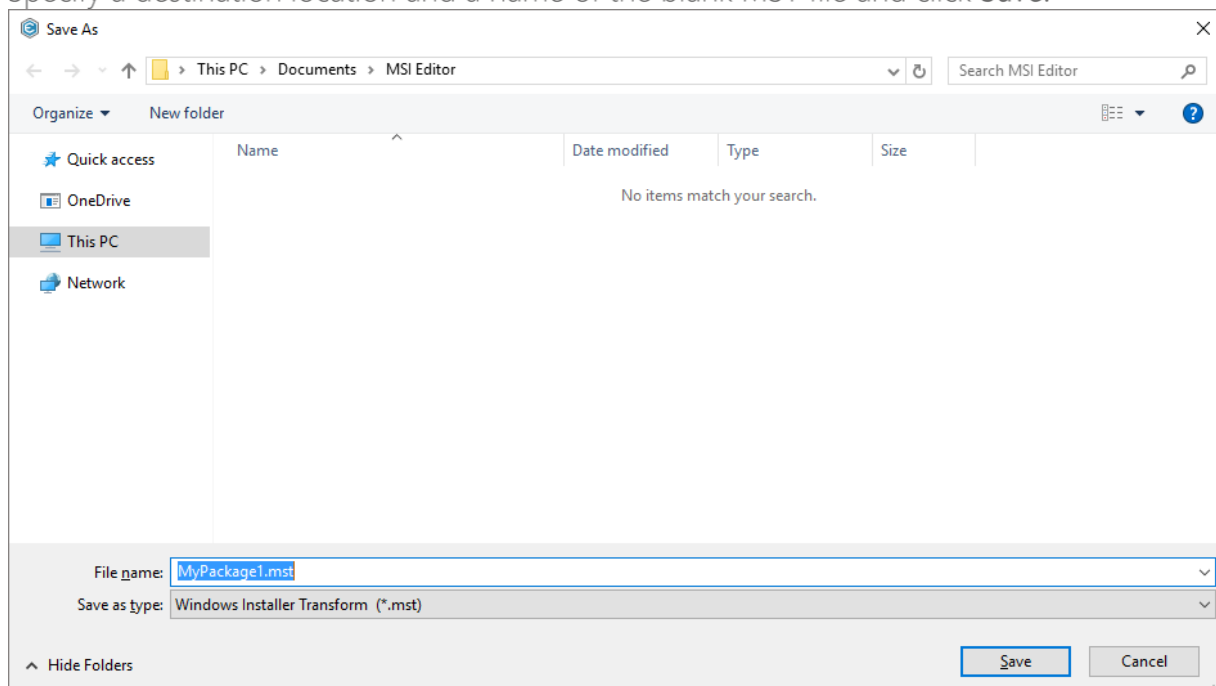
[3]. Choose your MSI package, for which you want to create an MST, and click Open.



- [4]. Select New MST... from MENU.



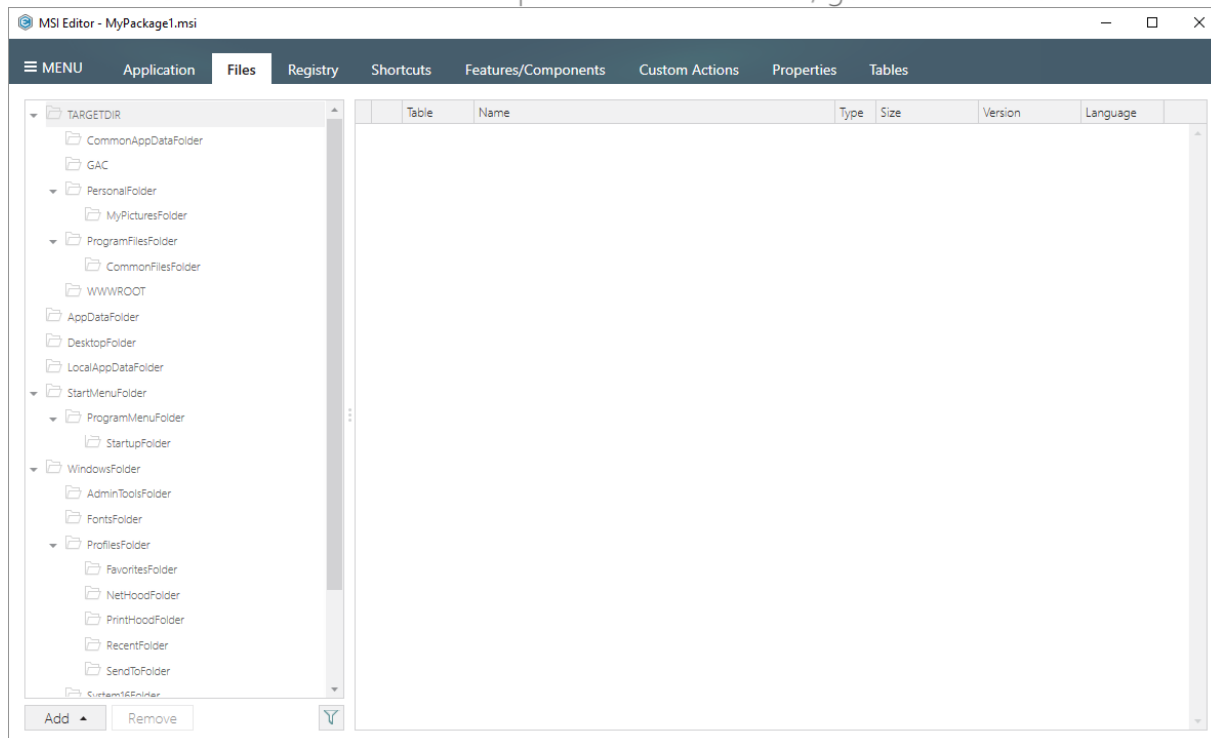
- [5]. Specify a destination location and a name of the blank MST file and click Save.



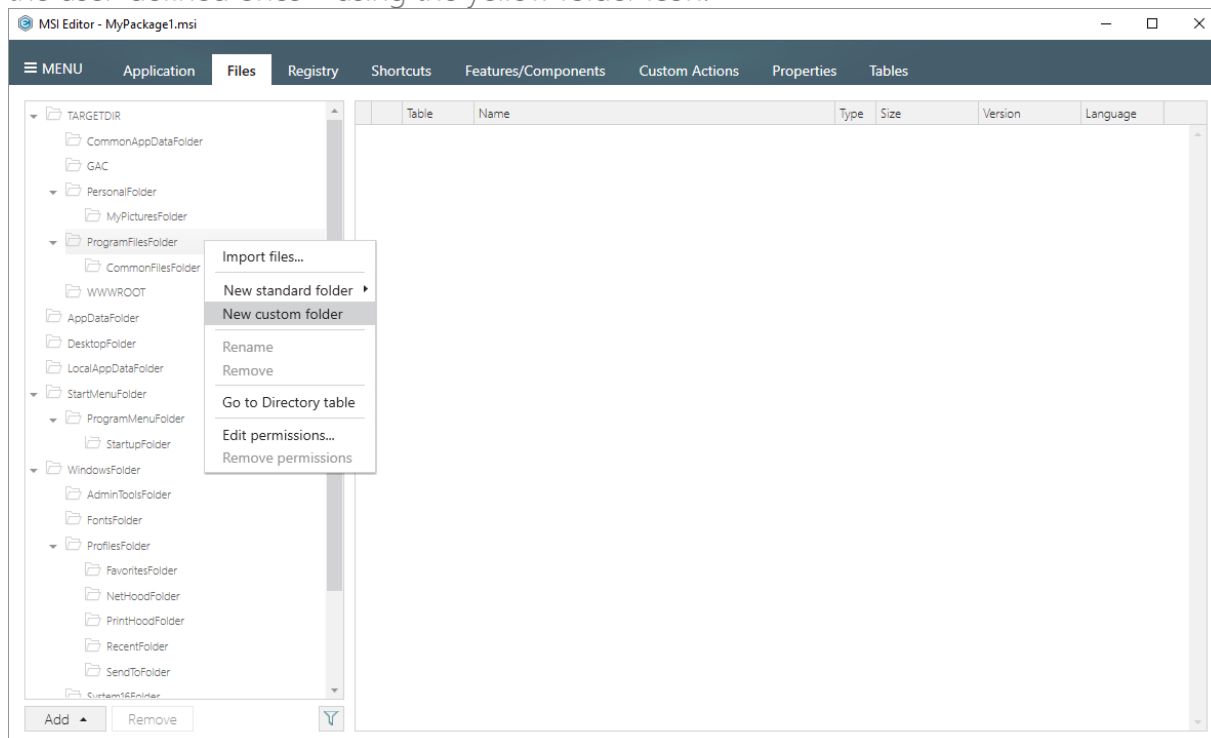
- [6]. Now you can start modifying the existing or adding new resources to the opened MSI package via the MST in MSI Editor. The steps from [7] to [15] describe how to create a new folder and import files to this folder; the steps from [16] to [24] describe how to create a new registry key, value, and import registry entries from the REG files; the steps from [25]

to [31] describe how to create a new and import existing shortcuts to the package; and the last step [32] describes how to save all these changes to MST.

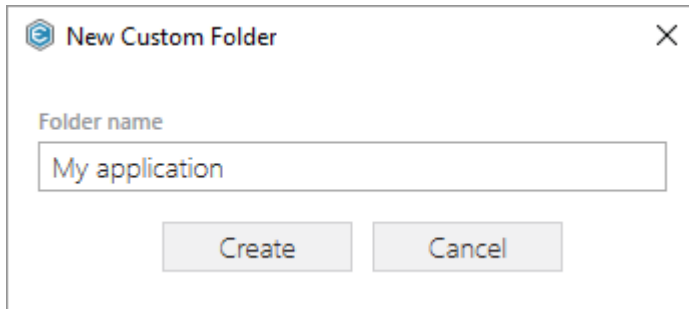
- [7]. In order to create a new folder and import files to this folder, go to the Files tab.



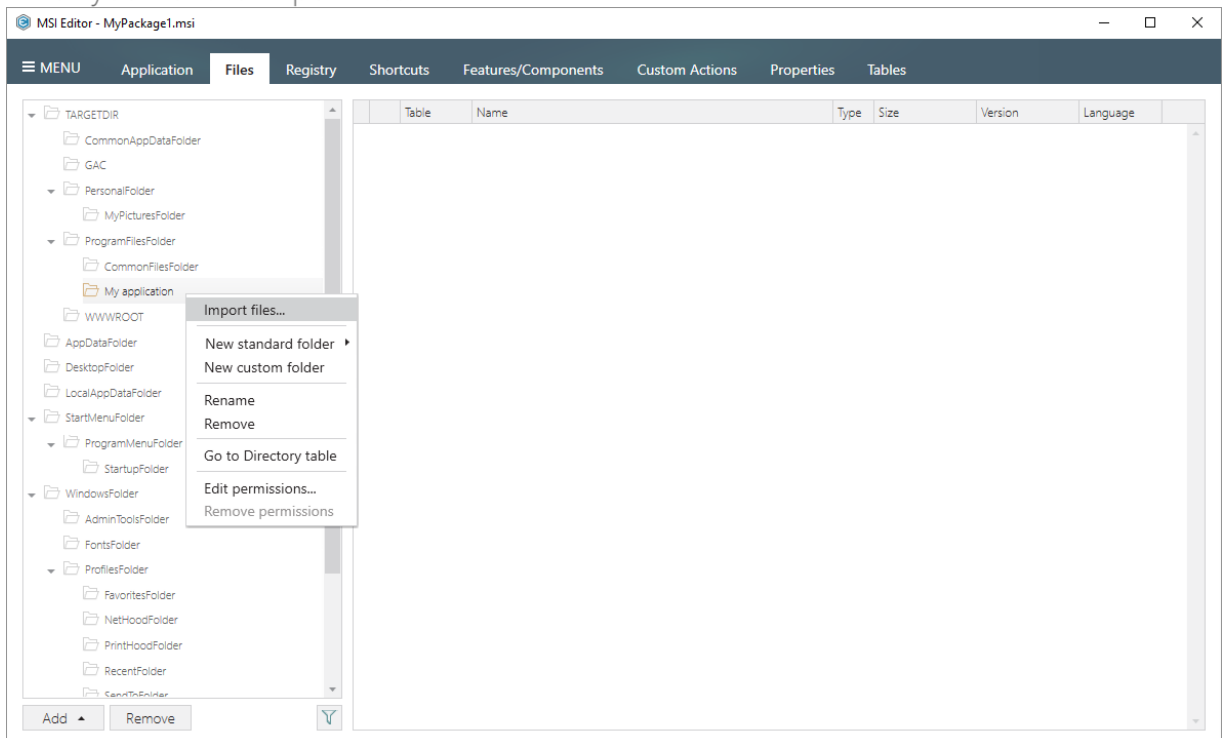
- [8]. Select New custom folder from the context menu of a folder, where you want to create a new folder. Note that standard MSI folders are displayed using the grey folder icon and the user-defined ones – using the yellow folder icon.



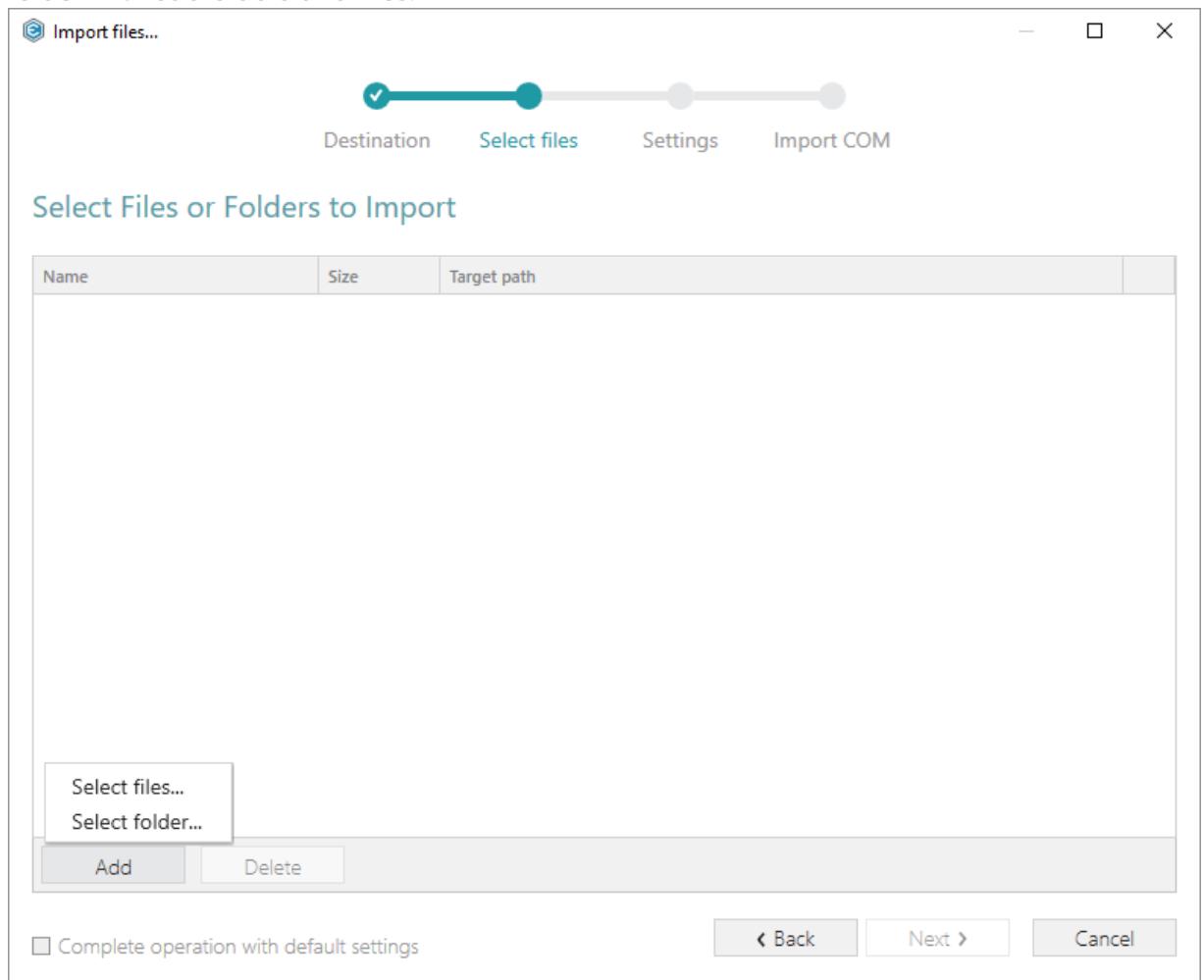
- [9]. Enter a folder name and click Create.



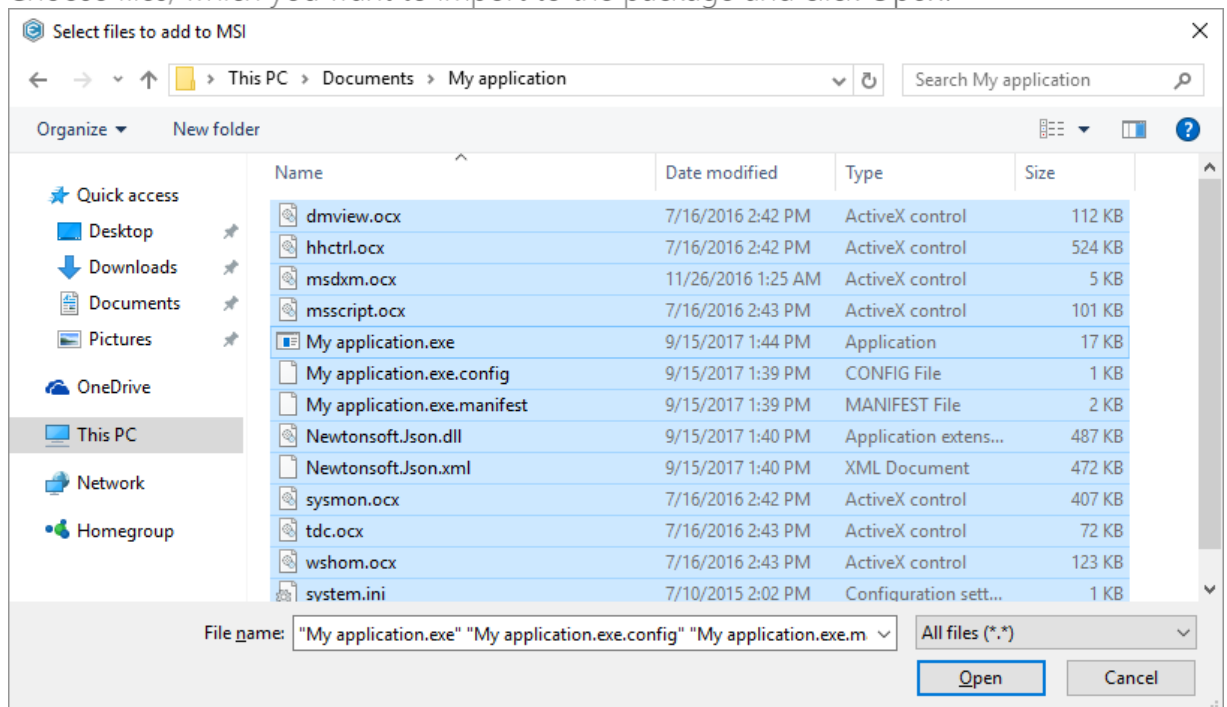
- [10]. For adding files to your package, select Import files... from the context menu of a folder, to which you want to import files.



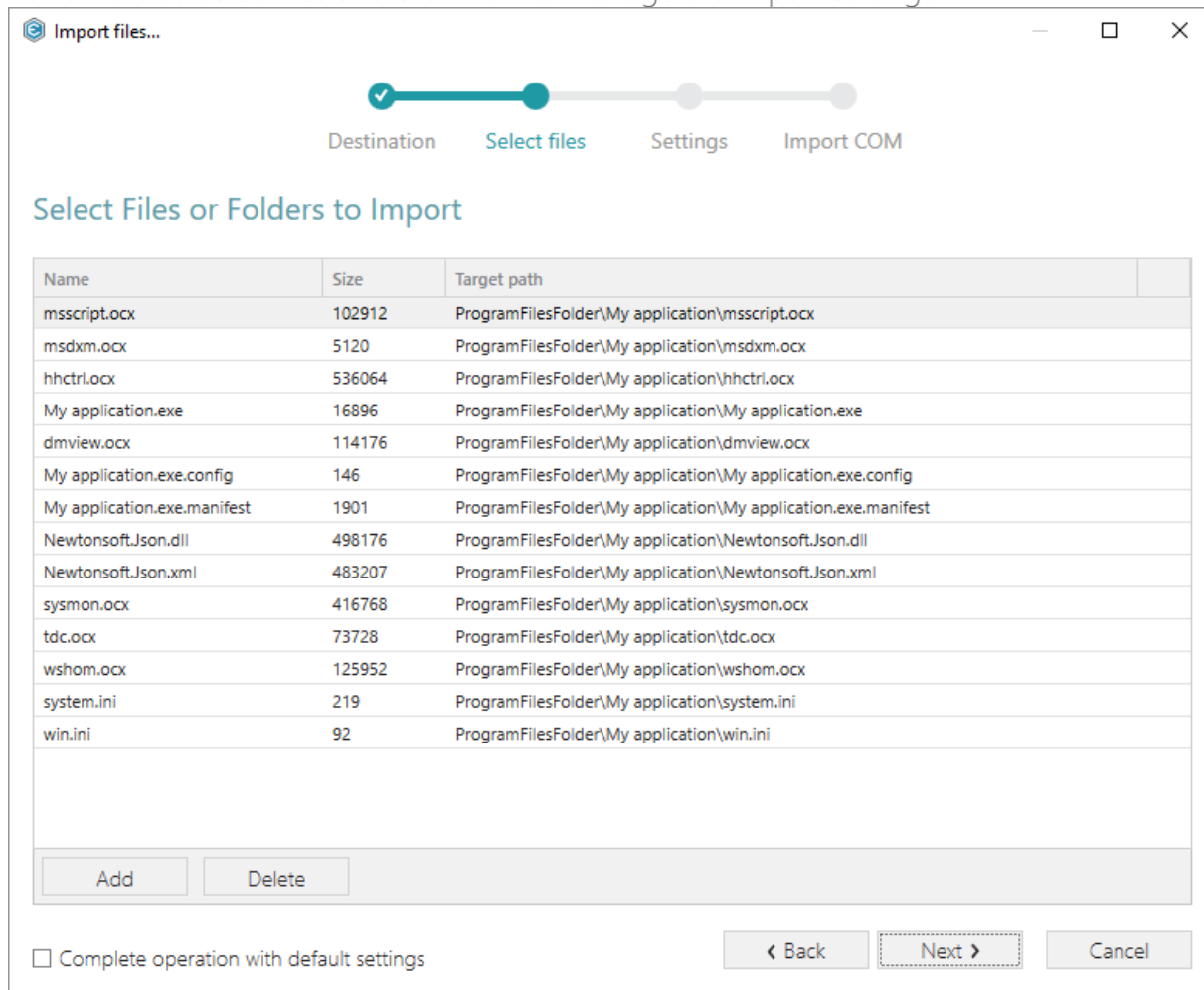
- [11]. Click Add -> Select files... to choose files in a folder or Add -> Add folder... to choose folder with subfolders and files.



- [12]. Choose files, which you want to import to the package and click Open.



[13]. Review the selected files and click **Next** to manage the import settings.



[14]. At this step, you can manage how to save INI files, select an MSI Feature, to which component with files will be assigned and select Compression type for your files. Below, in the tables, you will find the detailed description of these settings. Click **Next** to continue.

Import files...

✓

✓

DestinationSelect filesSettingsImport COM

Settings

Select how to handle INI files

INI files

Install standard INI files via IniFile table; non-standard via File table (recommended)

[Show non-standard INI-files](#)

Select a feature to assign new components to

Feature

<New Feature>

New feature...

☒ Create new feature

Select a compression type for new files

Media type

New CAB file

☐ Complete operation with default settings

< Back

Next >

Cancel

INI files settings

Install standard INI files via IniFile table; non-standard via Files table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data will be saved to the 'File' table as binary files.

Install all INI files via File table

All INI files will be saved only to the 'File' table as binary files.

Install all INI files via File table and duplicate to IniFile table

All INI files will be saved to both the 'File' and the 'IniFile' tables. This option is used to install INI files with unsupported data keeping their original file structure and update the necessary INI file values.

Feature settings

Create new feature

Either the "PACE_Complete" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-machine locations, or the "PACE_UserPart" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-user locations. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart"



one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

<a feature, selected from the list>	Components with files will be assigned to a feature, selected from the list.
-------------------------------------	--

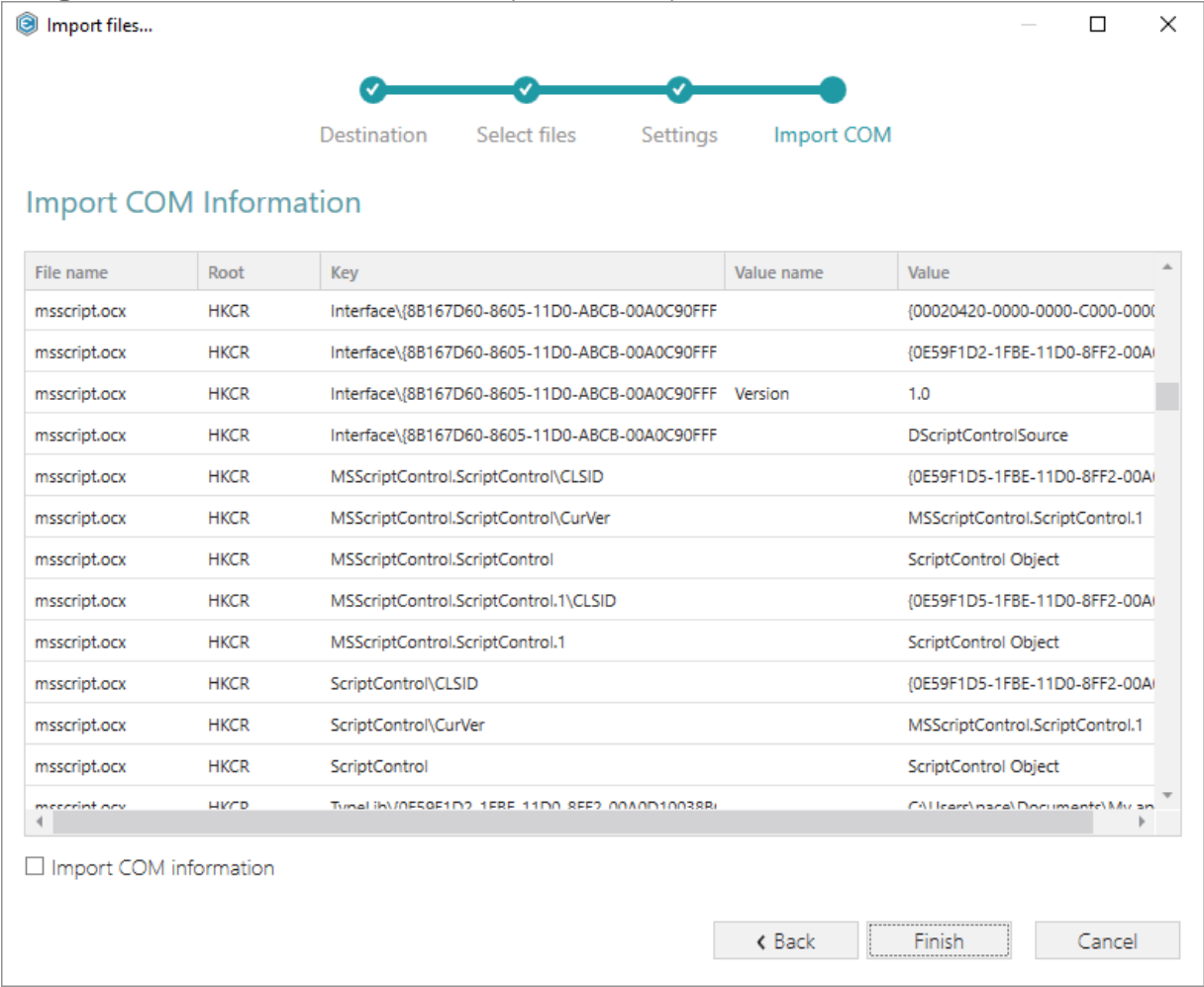
Media type settings

New Cab file	The imported files will be compressed to a new external cabinet (CAB) file. The external cabinet files are always placed next to the MSI package.
Uncompressed	The imported files will be copied to the MSI folder without compression. Note that copied files will be placed to the folder structure accordance to their target paths.
Existing	The imported files will be compressed to the existing external cabinet (CAB) file, which was created during the previous file import. Note that this option is visible only if during the current editing session you have already imported files with 'New Cab file' option.

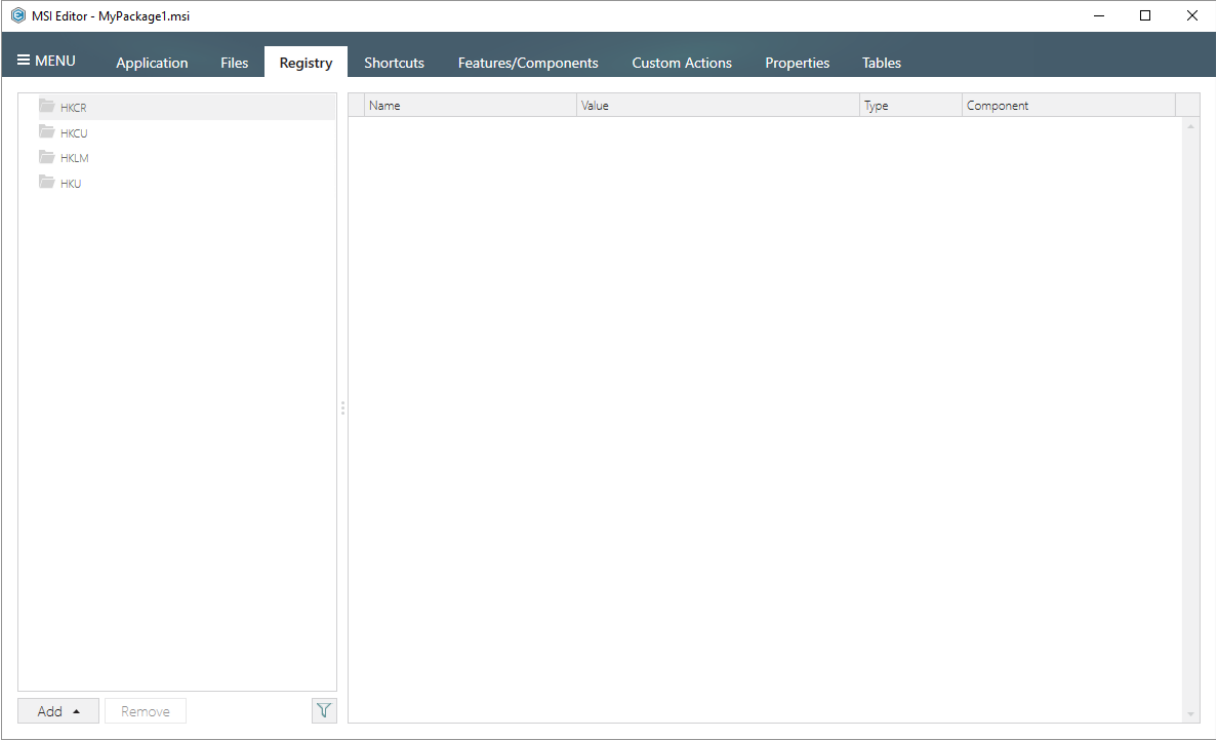
[15]. Review the COM information, extracted from the selected files, and select the **Import COM information** option to import this registration information into the 'Registry' table.



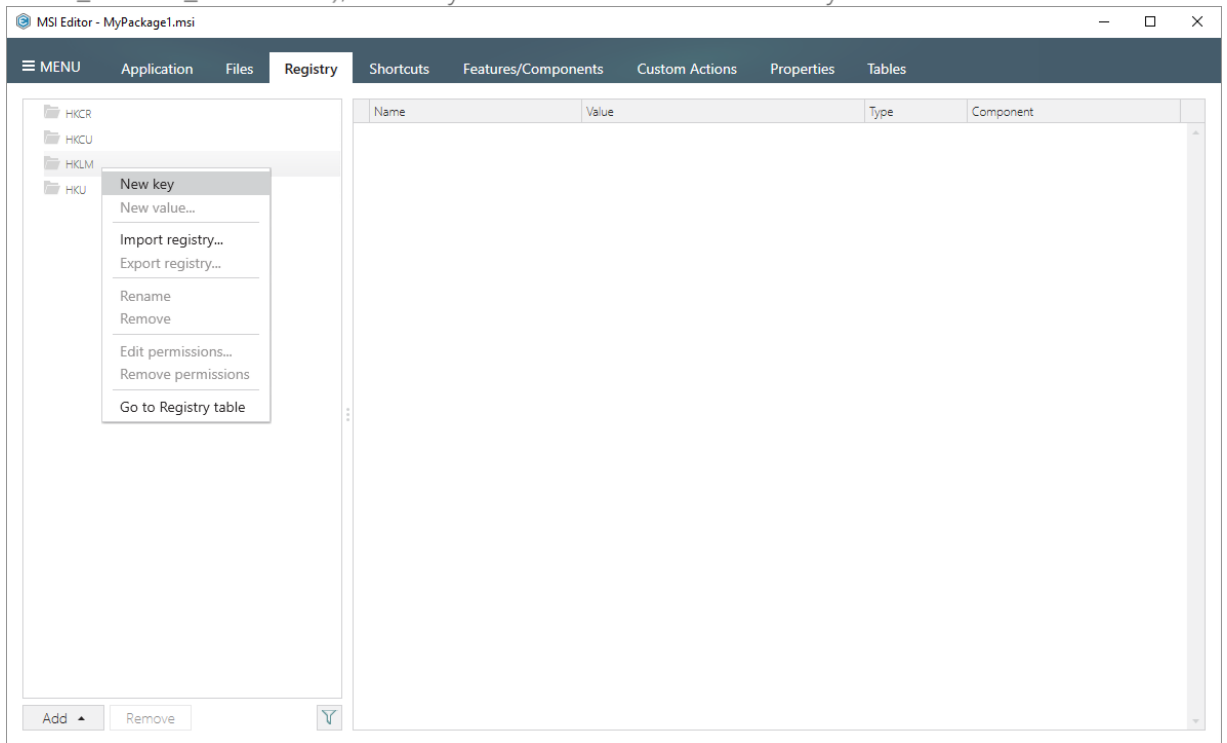
along with the files. Click **Finish** to complete the import.



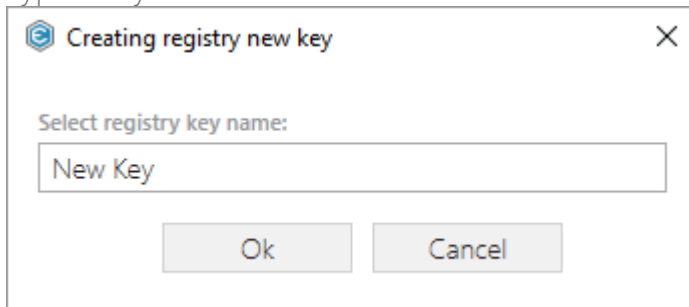
[16]. If you need to create a new registry key, open the Registry tab.



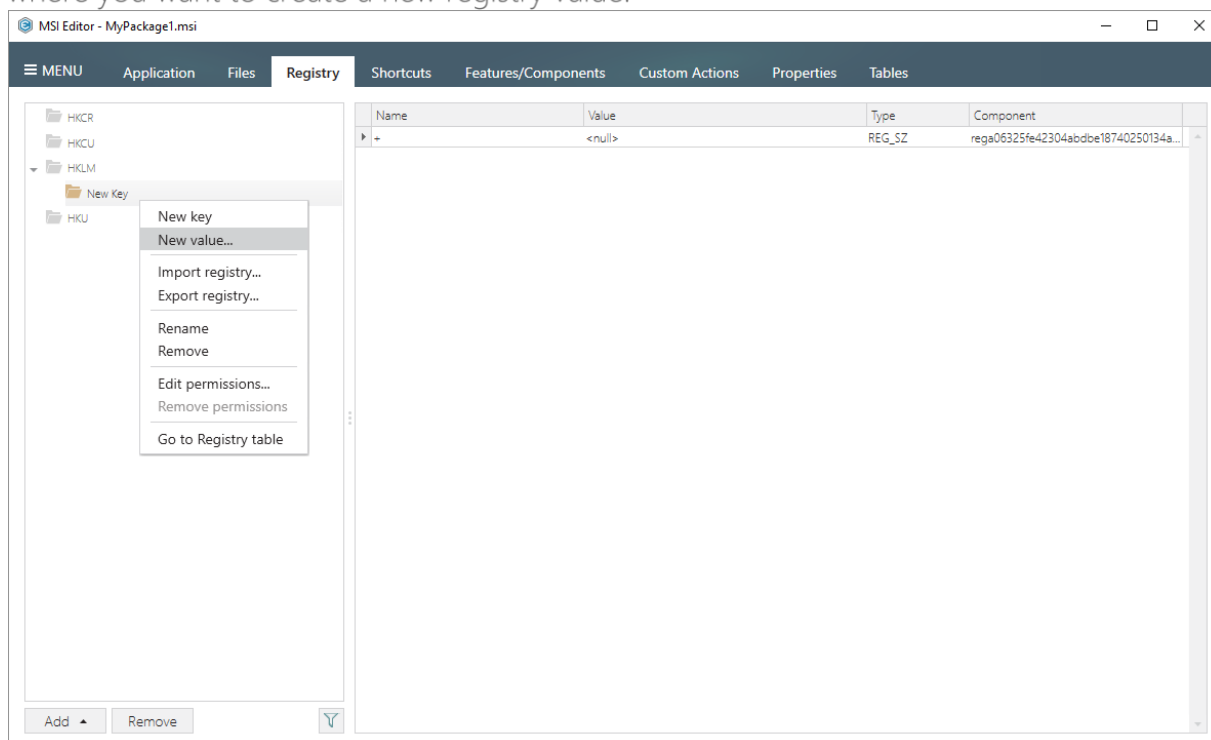
- [17]. Select **New key** from the context menu of a root hive (e.g. HKLM - HKEY_LOCAL_MACHINE), where you want to create a new key.



- [18]. Type a key name and click **Ok**.



- [19]. In order to create a new registry value, select **New value...** from the context menu of a key, where you want to create a new registry value.



- [20]. Enter a name and a value, select type from the list and component, to which the newly created registry value will be assigned, and then click **Add**.

Add value

Name: Test value

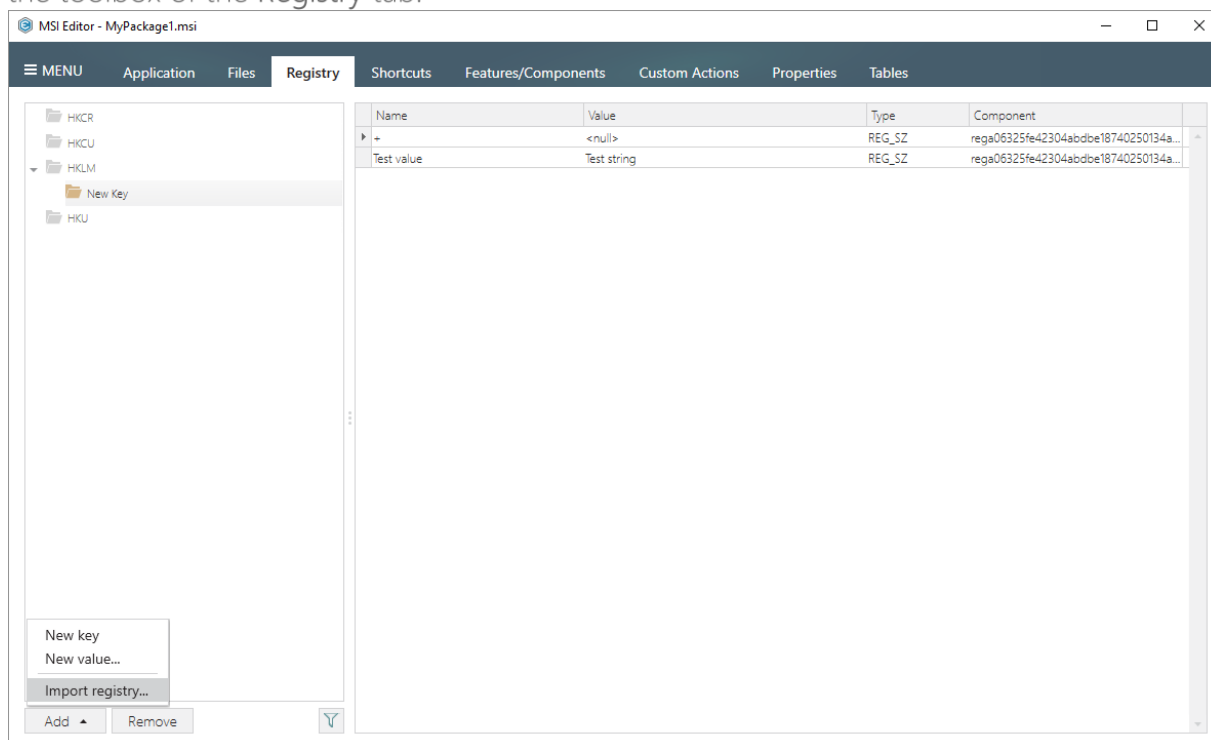
Type: REG_SZ

Value: Test string

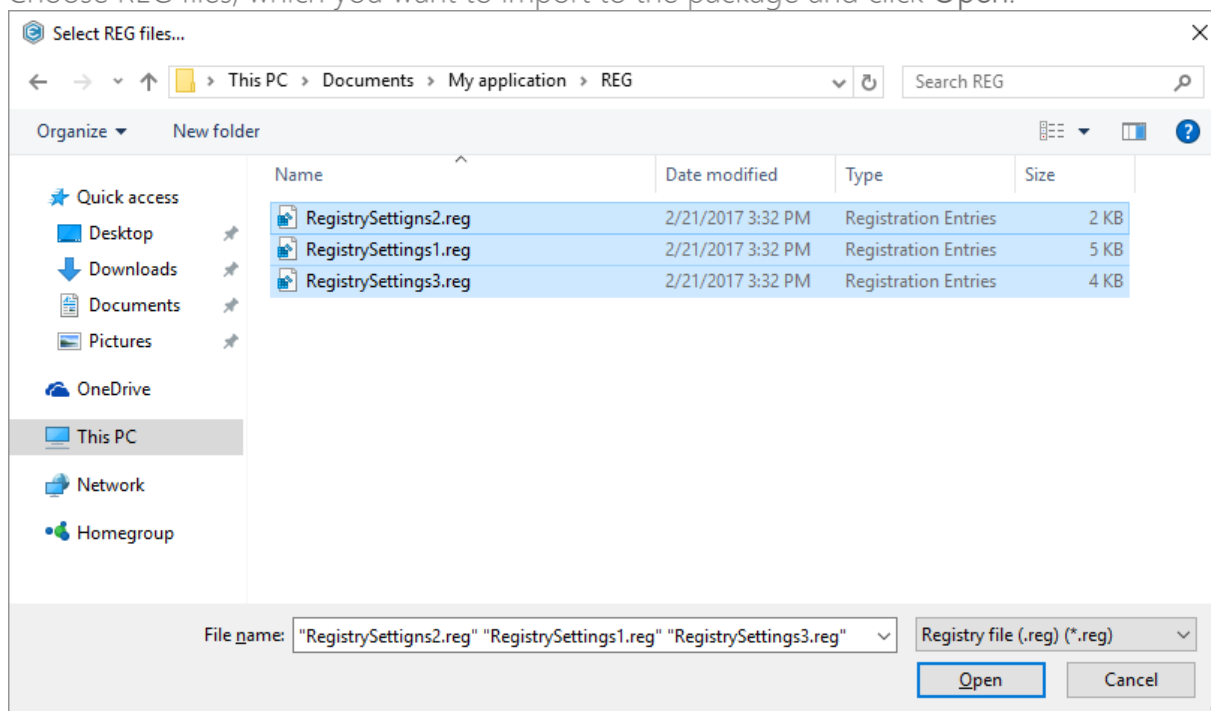
Component: rega06325fe42304abdbe18740250134a8d

Add Cancel

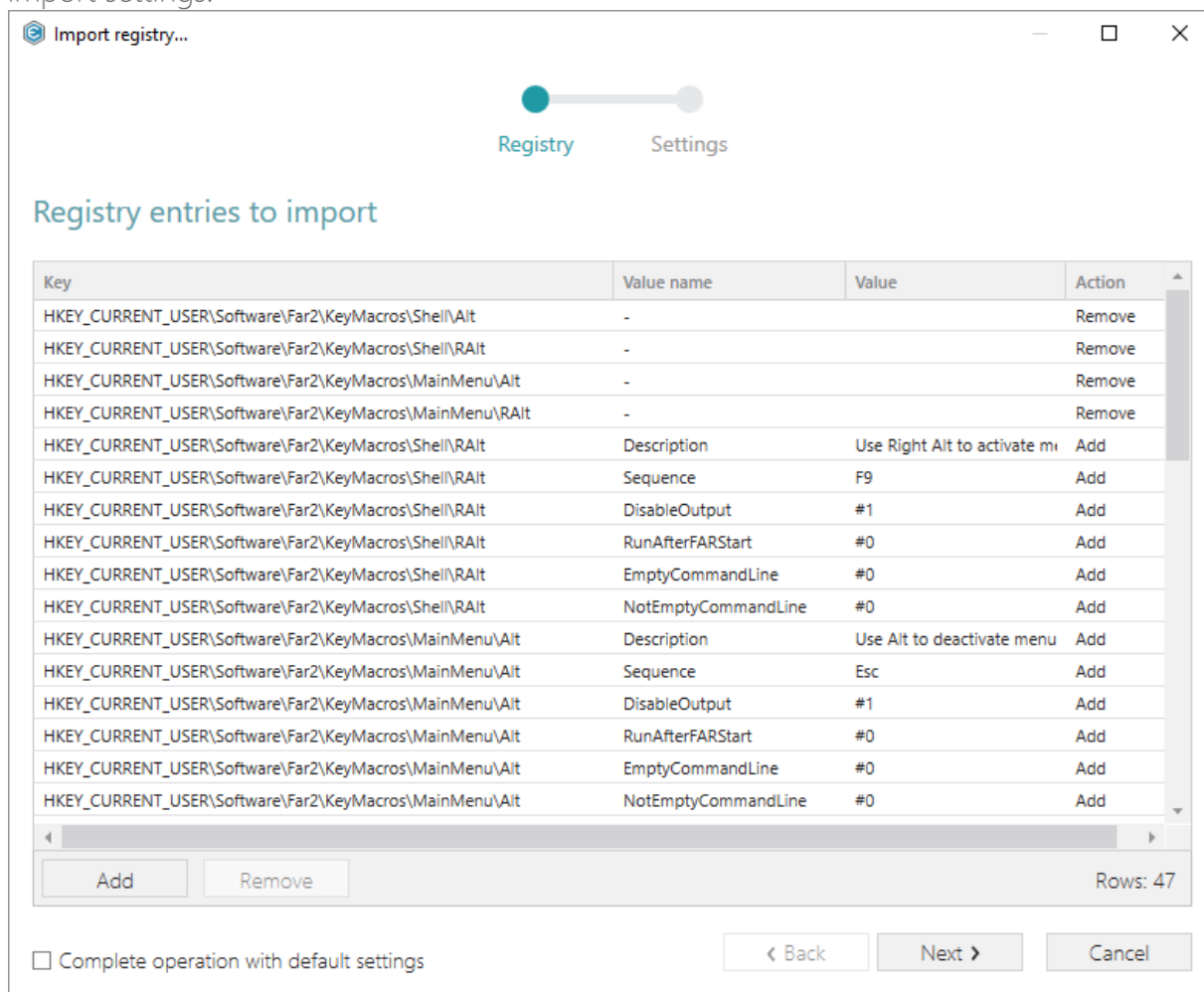
- [21]. In order to import registry entries from the REG file, select **Add -> Import registry...** from the toolbox of the Registry tab.



- [22]. Choose REG files, which you want to import to the package and click **Open**.



- [23]. Review the registry entries, read from the selected REG files, and click **Next** to manage the import settings.



Import registry...

Registry Settings

Registry entries to import

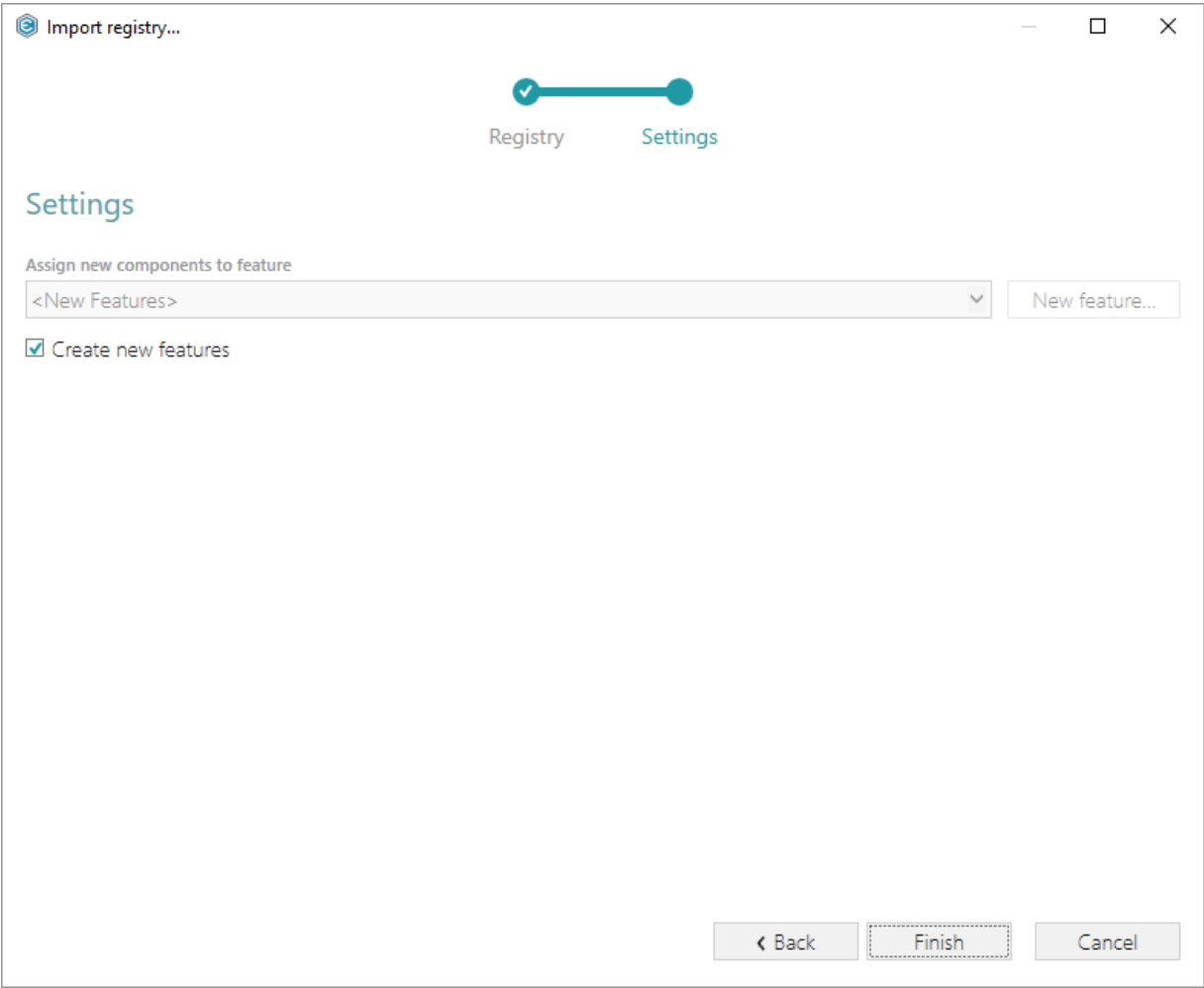
Key	Value name	Value	Action
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\Alt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\RAIt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	Description	Use Right Alt to activate m	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	Sequence	F9	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	DisableOutput	#1	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	RunAfterFARStart	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	EmptyCommandLine	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	NotEmptyCommandLine	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	Description	Use Alt to deactivate menu	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	Sequence	Esc	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	DisableOutput	#1	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	RunAfterFARStart	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	EmptyCommandLine	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	NotEmptyCommandLine	#0	Add

Add Remove Rows: 47

☐ Complete operation with default settings

< Back Next > Cancel

- [24]. At this step, you can select an MSI Feature, to which component with registry entries will be assigned. Below, in the tables, you will find the detailed description of these settings. Click **Finish** to complete the import.



Feature settings

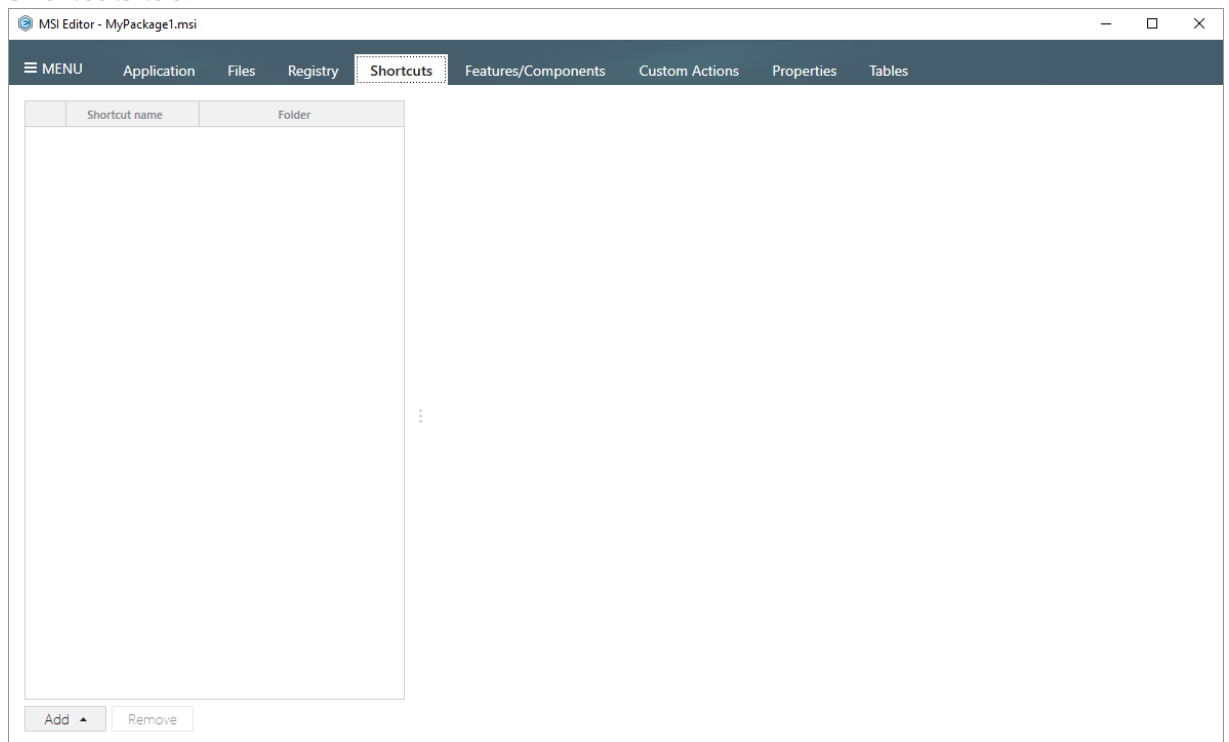
Create new features

The "PACE_Complete" feature will be created (or used if exists) for keeping components with the per-machine registry entries, and the "PACE_UserPart" feature will be created (or used if exists) for keeping components with the per-user registry entries. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart" one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

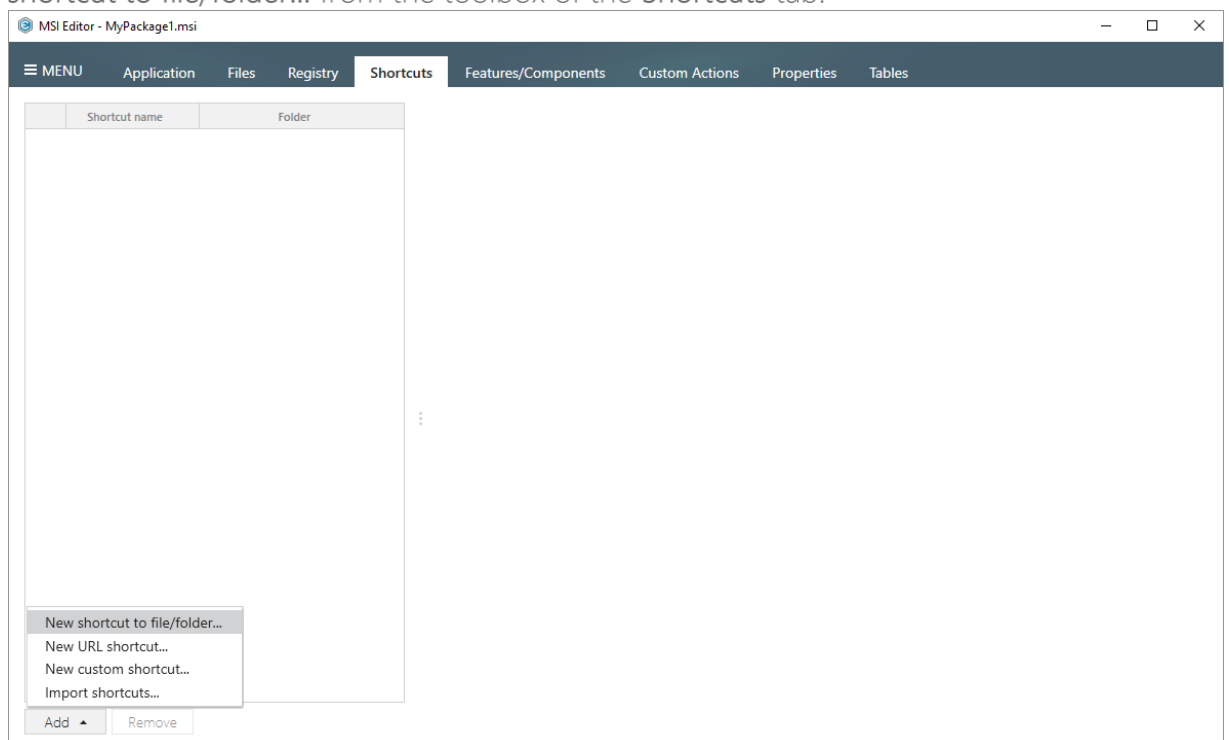
<a feature, selected from the list>

Components with the imported registry entries will be assigned to a feature, selected from the list.

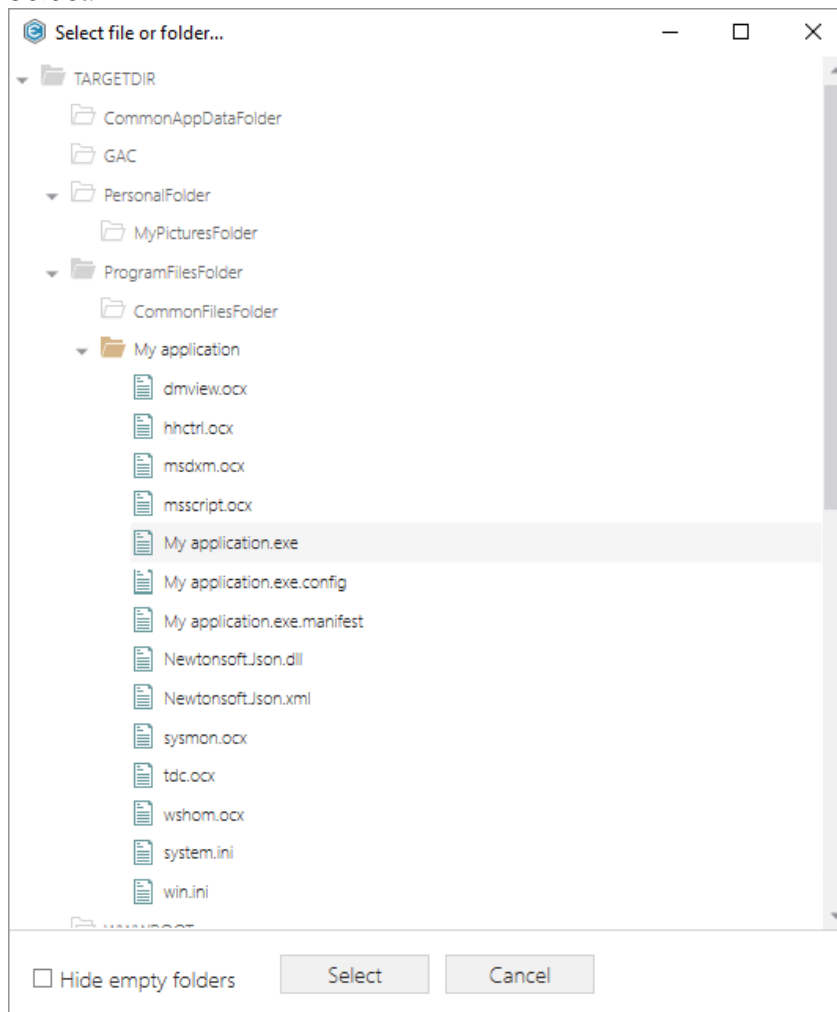
[25]. If you need to create a new or import existing shortcuts to the package, go to the Shortcuts tab.



[26]. For creating a new shortcut that points to a file inside the package, select Add -> New shortcut to file/folder... from the toolbox of the Shortcuts tab.

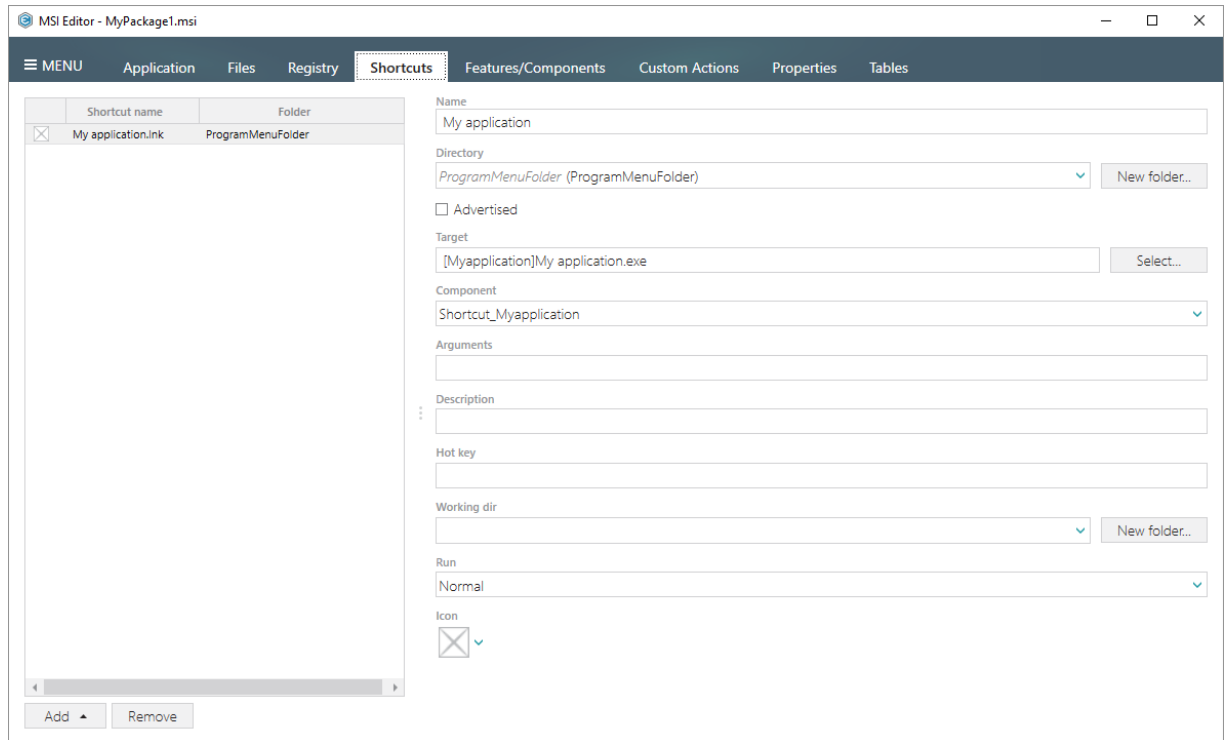


- [27]. Select a file (e.g. My application.exe), which will be launched by this shortcut, and click Select.

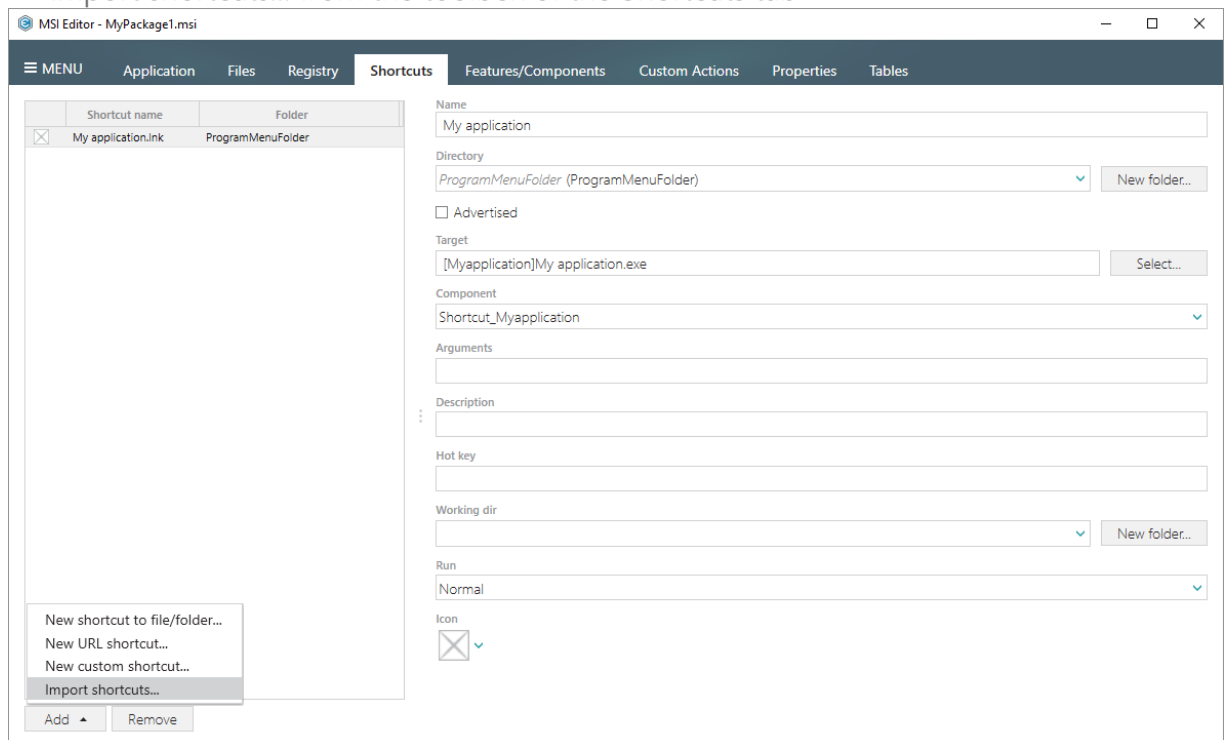


- [28]. Using the details pane, you can update the shortcut name, destination location, target, icon and so on. Select the **Advertised** option to convert the created regular shortcut to the

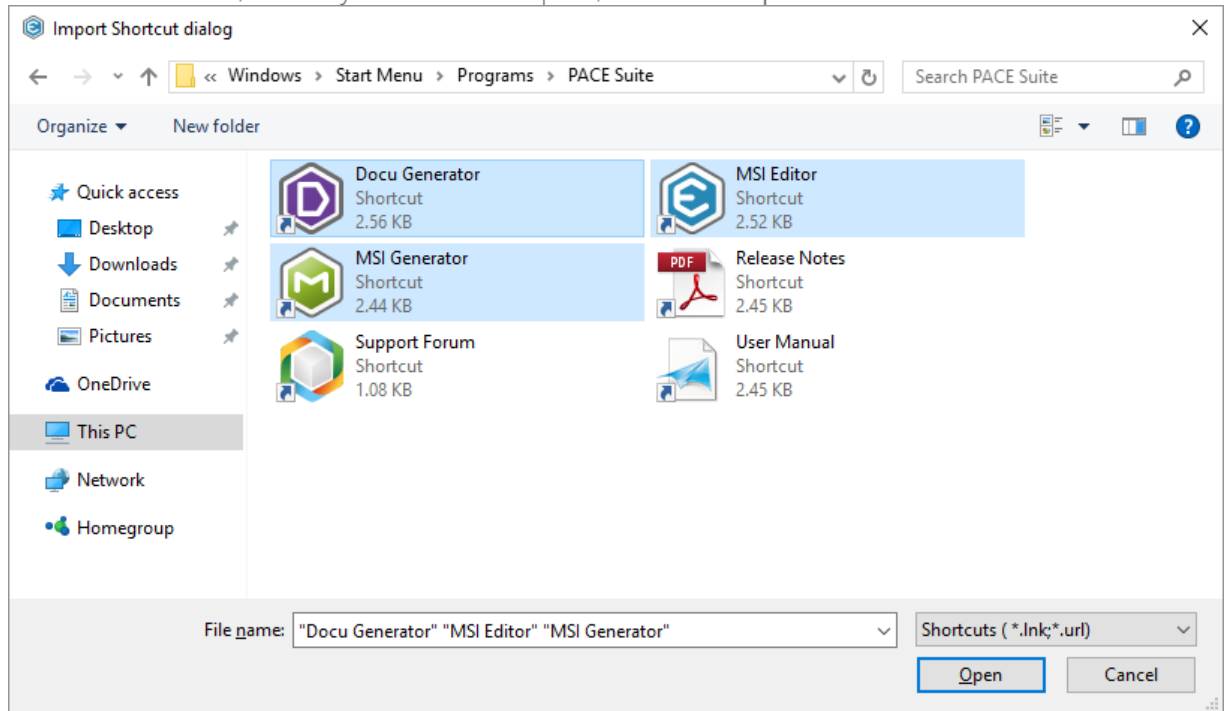
advertised one.



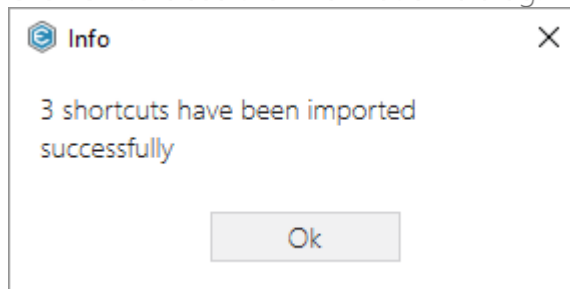
[29]. In order to import LNK and URL shortcuts to the package from the file system, select Add -> Import shortcuts... from the toolbox of the Shortcuts tab



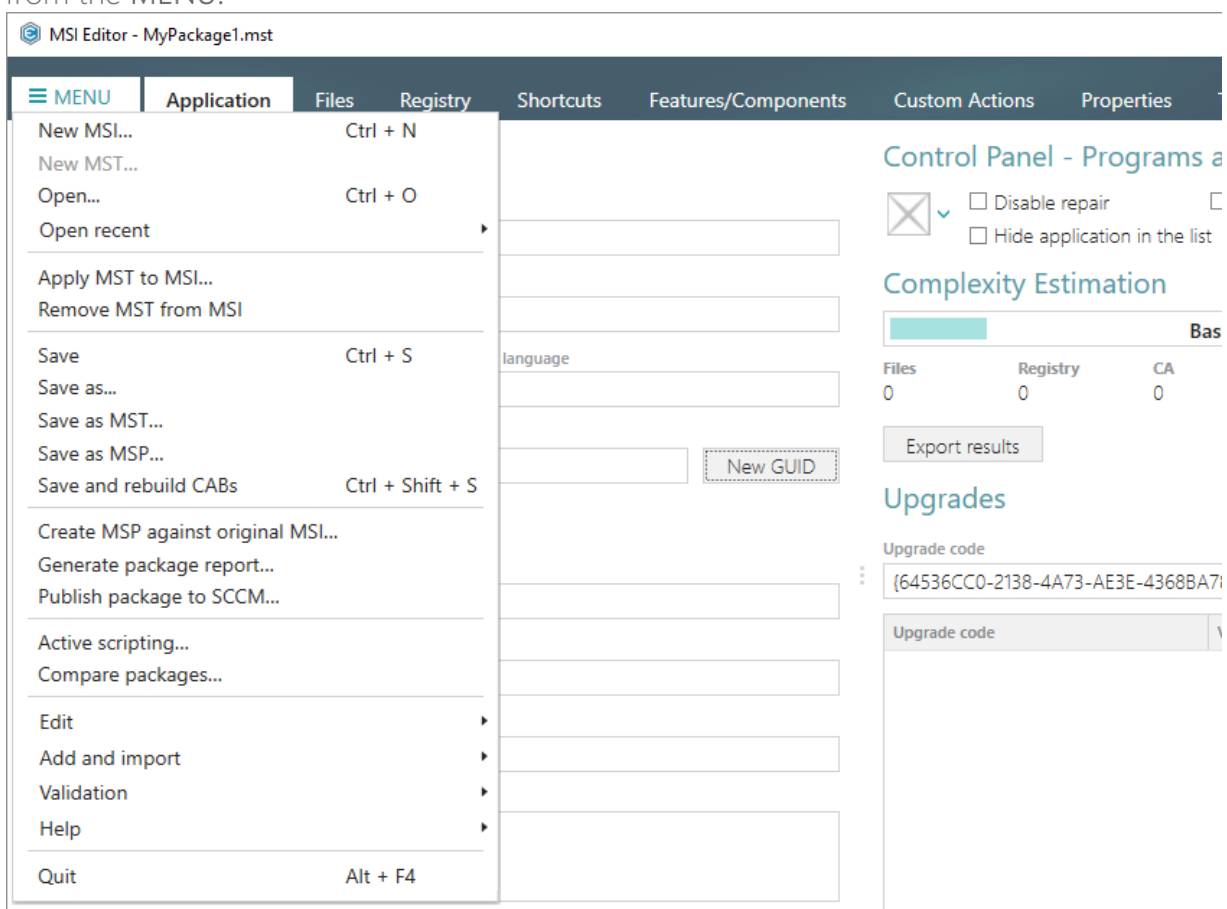
[30]. Choose shortcuts, which you want to import, and click Open.



[31]. Click Ok to close the information dialog.



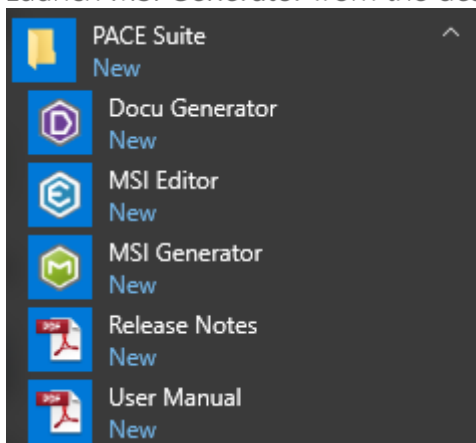
- [32]. In order to save your changes, made to the opened MSI package via MST, select Save from the MENU.



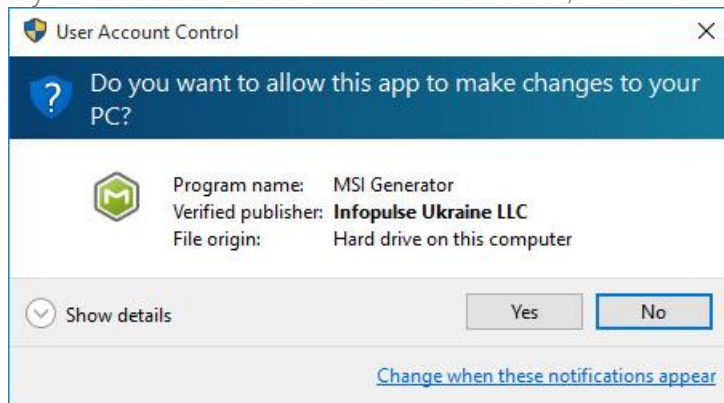
3.2.2 Create Response MST

Capture all your inputs and changes, made to the Windows Installer UI dialogs of the MSI installation, and save them to the MST file using MSI Generator. The MSI installation will be simulated, which allows capturing all necessary changes very promptly and without affecting your real system.

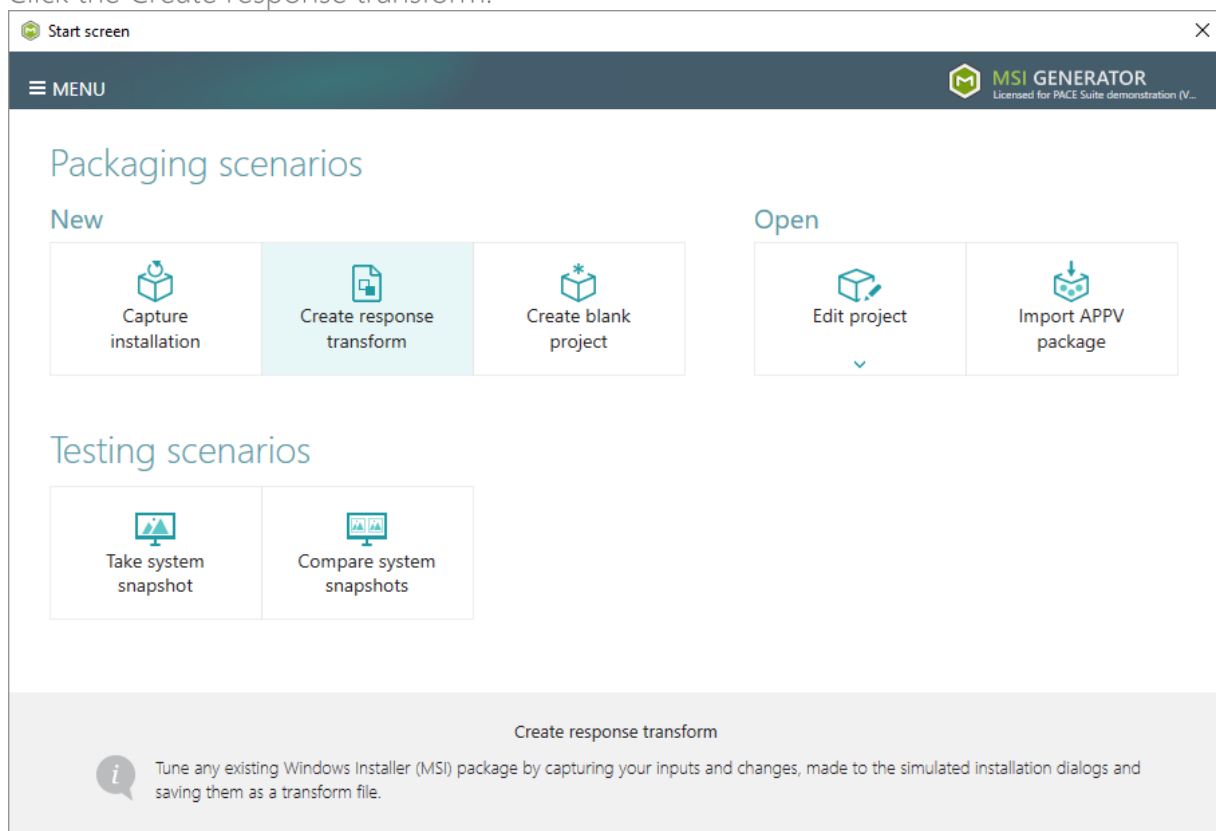
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click the Create response transform.

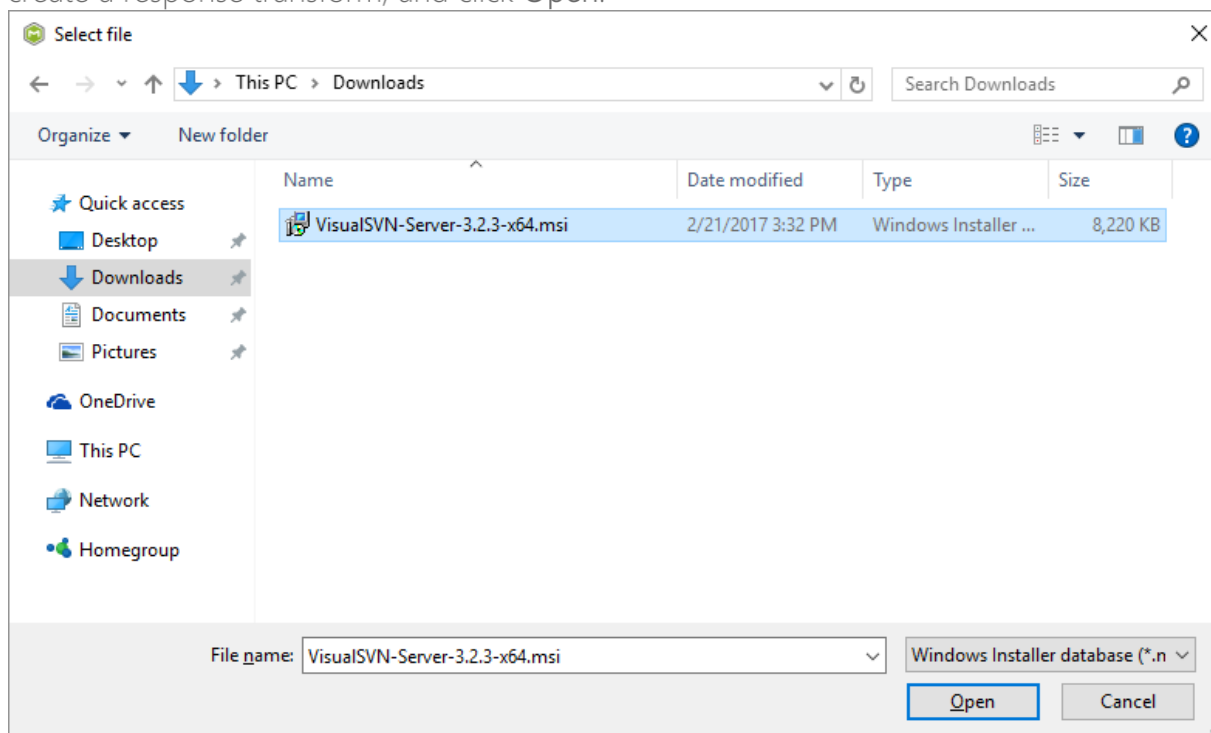


- [4]. Click Browse..., located next to the MSI package for tailoring field, to select an MSI package for tailoring. Note that the MSI installation will be simulated and will not affect

your real system.

The screenshot shows the 'Create a response transform' wizard. At the top, a progress bar has four steps: 'MSI for tailoring' (active), 'Installation simulation', 'Captured changes', and 'Completion'. Below the progress bar, the title 'Select an MSI for Tailoring' is displayed. The form contains three input fields: 'MSI package for tailoring' with a 'Browse...' button, 'Apply transform (optional)' with a 'Browse...' button, and 'Command-Line options (MSI properties only)'. There is an unchecked checkbox labeled 'Ignore MSI launch condition'. A note at the bottom states: 'NOTE A response transform is an MST file containing all yours inputs and changes, made to the Windows Installer (UI) Dialogs of the simulated MSI installation. The simulated MSI installation will not affect your system.' At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- [5]. Choose an MSI package (e.g. VisualSVN-Server-3.2.3-x64.msi), for which you want to create a response transform, and click Open.



- [6]. The Apply transform (optional) and Command-Line options (MSI properties only) fields are optional and they allow applying additional MST and setting MSI properties before the MSI tailoring. Select the Ignore MSI launch condition option to skip all condition from the LaunchCondition MSI table.

Create a response transform

MSI for tailoring Installation simulation Captured changes Completion

Select an MSI for Tailoring

MSI package for tailoring
C:\Users\pace\Downloads\VisualSVN-Server-3.2.3-x64.msi Browse...

Apply transform (optional)
 Browse...

Command-Line options (MSI properties only)

☐ Ignore MSI launch condition

NOTE A response transform is an MST file containing all yours inputs and changes, made to the Windows Installer (UI) Dialogs of the simulated MSI installation. The simulated MSI installation will not affect your system.

< Back Next > Cancel

[7]. Click Next to start the MSI installation simulation.

Create a response transform

MSI for tailoring Installation simulation Captured changes Completion

Select an MSI for Tailoring

MSI package for tailoring
C:\Users\pace\Downloads\VisualSVN-Server-3.2.3-x64.msi Browse...

Apply transform (optional)
 Browse...

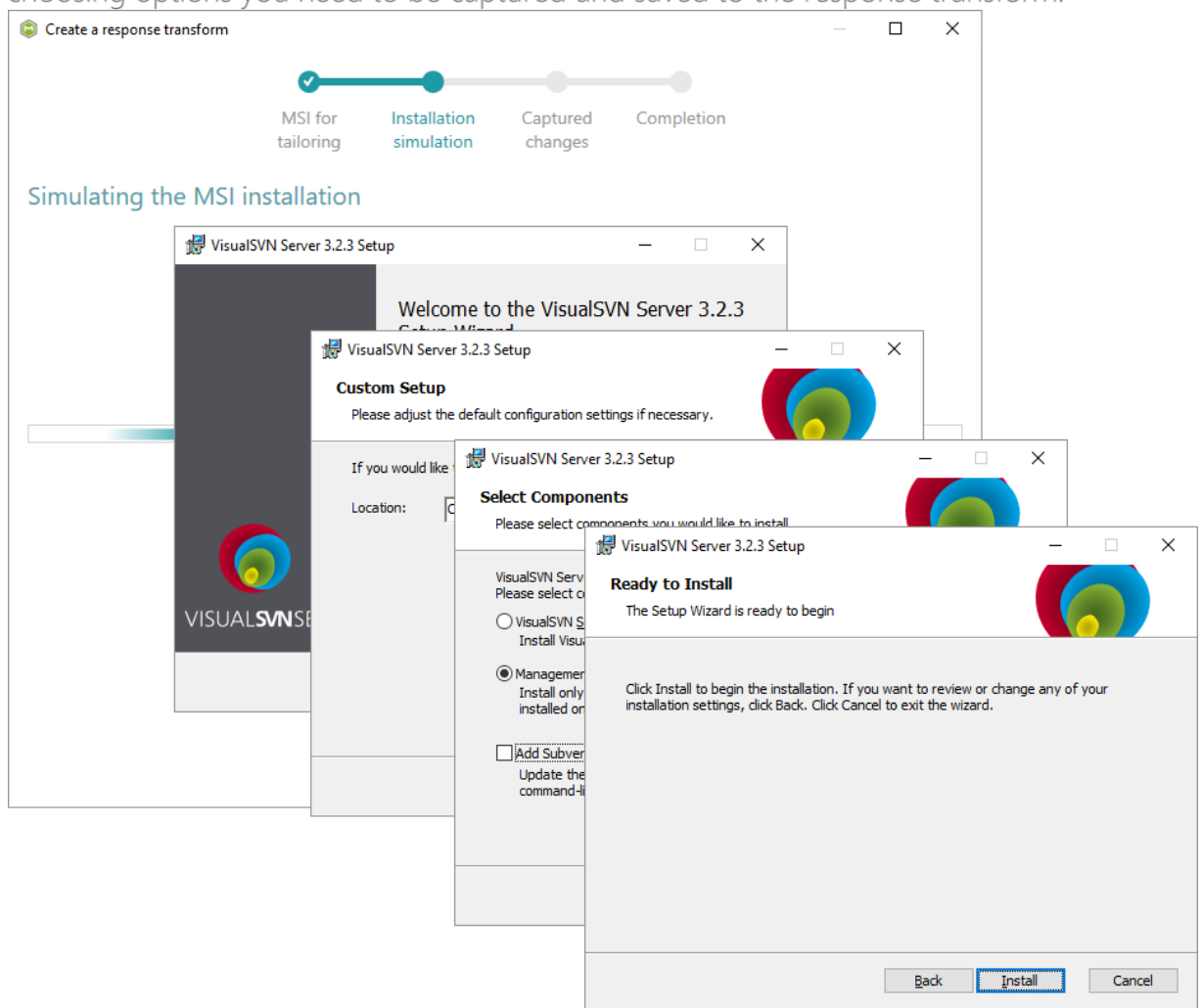
Command-Line options (MSI properties only)

☐ Ignore MSI launch condition

NOTE: A response transform is an MST file containing all your inputs and changes, made to the Windows Installer (UI) Dialogs of the simulated MSI installation. The simulated MSI installation will not affect your system.

◀ Back Next > Cancel

- [8]. Complete the simulated MSI installation following the Windows Installer dialogs and choosing options you need to be captured and saved to the response transform.



- [9]. Review captured information, which will be saved to the response transform (MST) file, by opening the Properties, Features and Directories tabs. Click Add to create new or click

Remove to remove the selected item in the opened tab.

Create a response transform

MSI for tailoring

Installation simulation

Captured changes

Completion

Captured changes

Properties

Features

Directories

Items	Old value	New value	Captured state
LicenseAccepted		1	Created
ShowMigratePermissionsReport		0	Created
Feature_AddSvnToPath		1	Created
_BrowseProperty		INSTALLDIR	Created
ManagerOnly	0	1	Updated
SideBannerBitmap	WixUI_Bmp_Side	WixUI_Png_Side	Updated
TopBannerBitmap	WixUI_Bmp_Top	WixUI_Png_Top	Updated
UpdatePathVariable	1		Removed

Add

Remove

Total rows: 8

< Back

Next >

Cancel

[10]. Click Next to choose the saving options.

Create a response transform

MSI for tailoring Installation simulation **Captured changes** Completion

Captured changes

Properties Features Directories

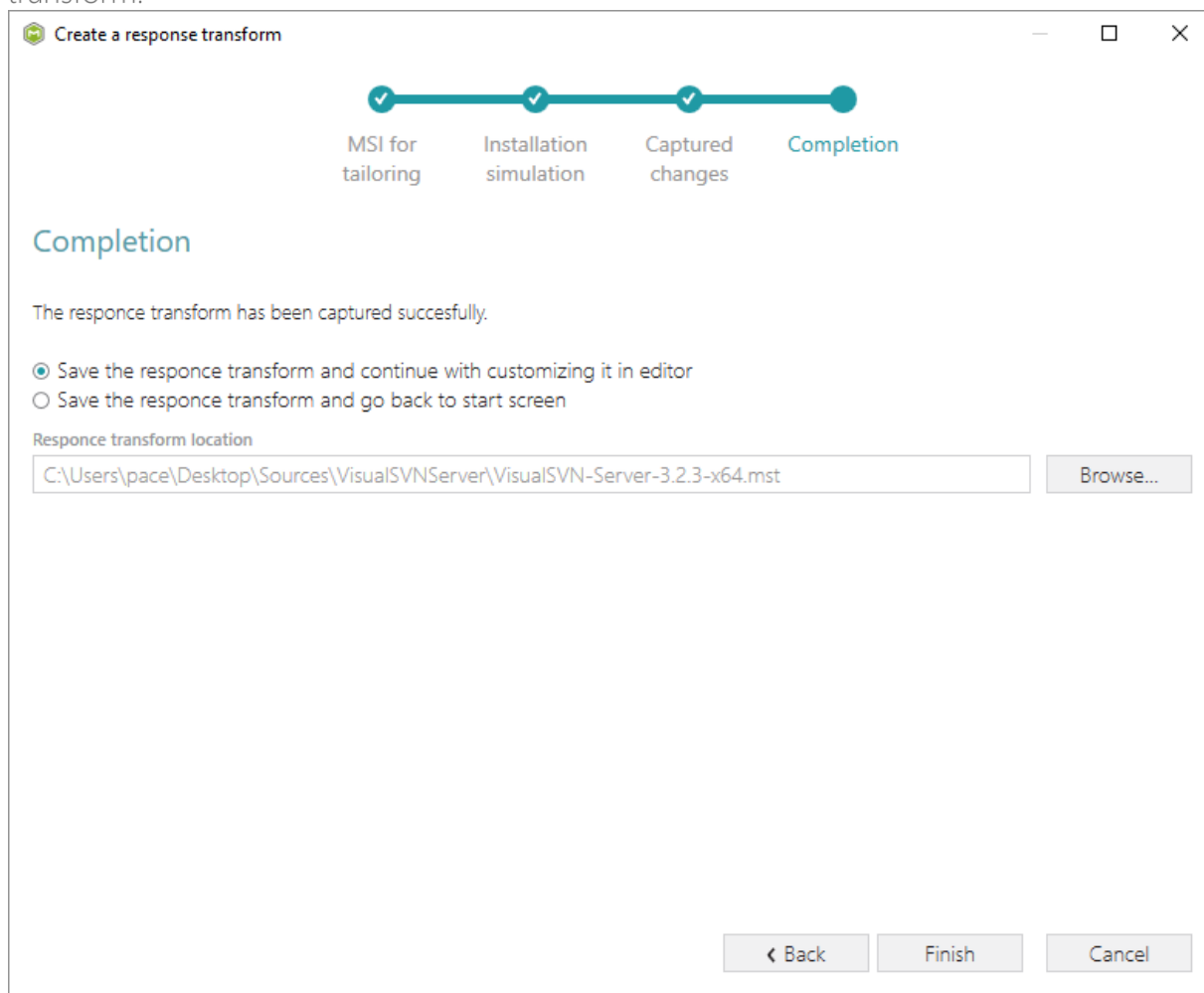
Items	Old value	New value	Captured state
LicenseAccepted		1	Created
ShowMigratePermissionsReport		0	Created
Feature_AddSvnToPath		1	Created
_BrowseProperty		INSTALLDIR	Created
ManagerOnly	0	1	Updated
SideBannerBitmap	WixUI_Bmp_Side	WixUI_Png_Side	Updated
TopBannerBitmap	WixUI_Bmp_Top	WixUI_Png_Top	Updated
UpdatePathVariable	1		Removed

Add Remove Total rows: 8

Back Next Cancel

[11]. We recommend to leave the Save the response transform and continue with customizing it in editor option selected to open the generated MST in MSI Editor. For changing the destination location and MST file name click **Browse...** Click **Finish** to create the response

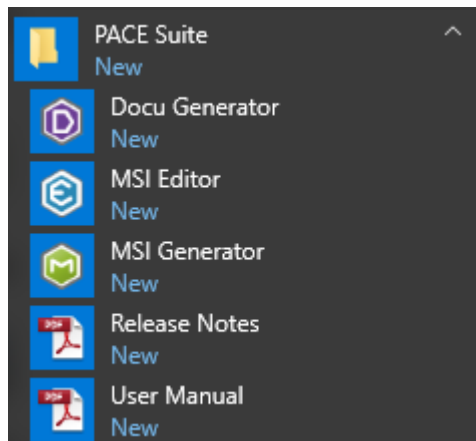
transform.



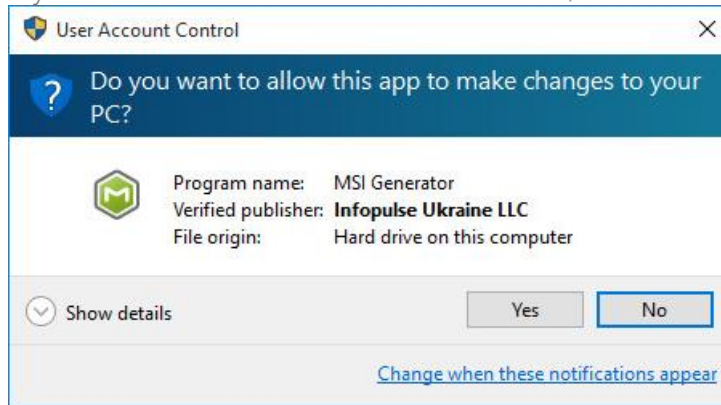
3.2.3 Capture System Changes to MST

Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MST file, generated against the selected MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.

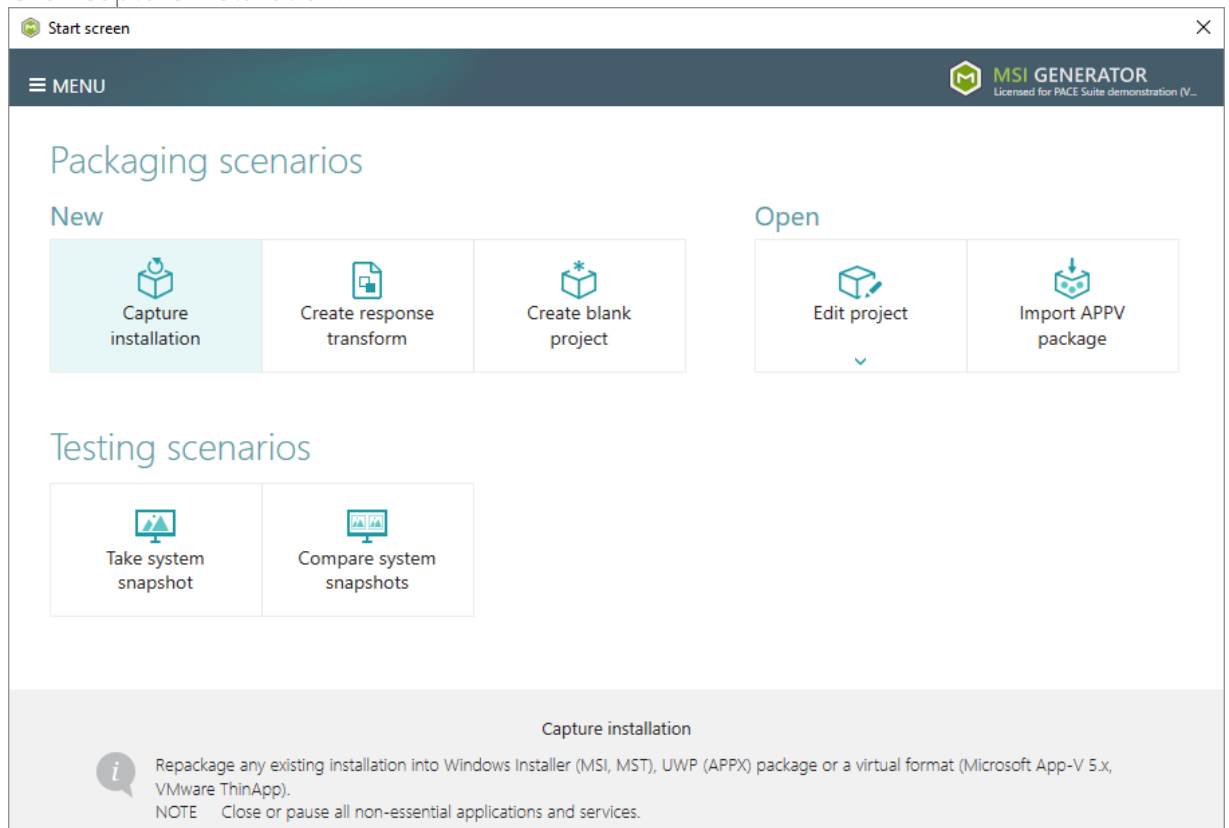
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



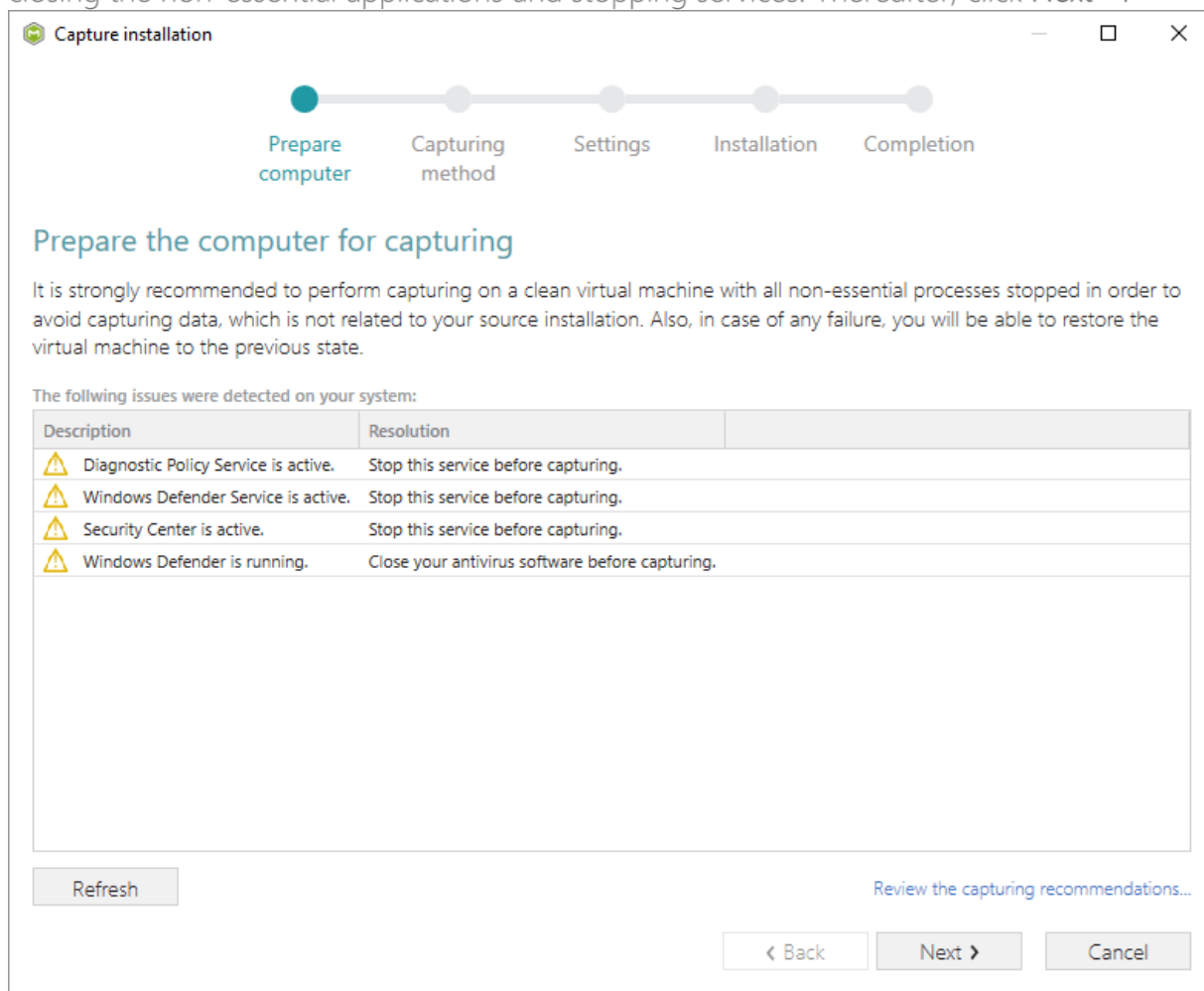
- [2]. If you have User Account Control enabled, click Yes in the opened window.



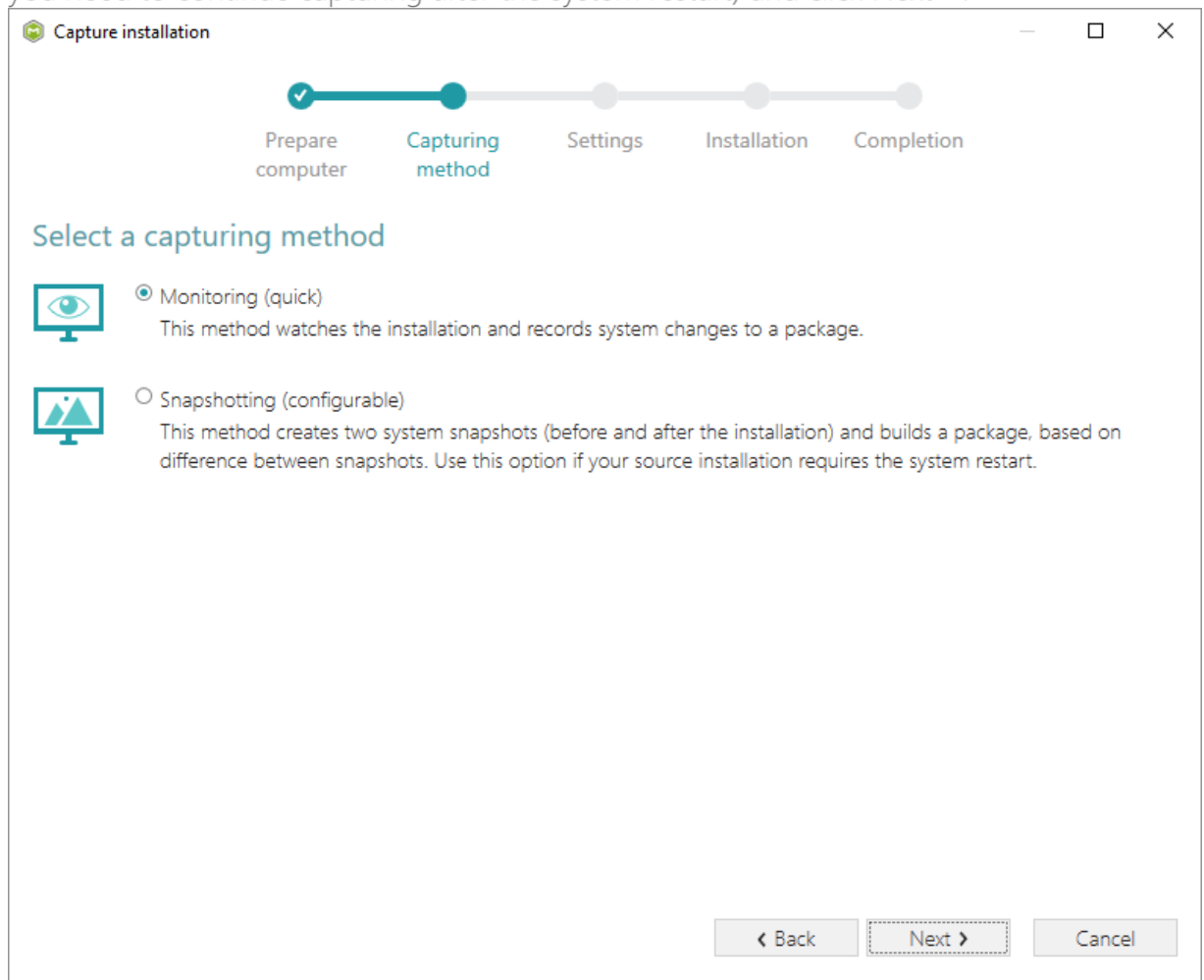
- [3]. Click Capture installation.



- [4]. Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- [5]. Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- [6]. Here you can review and update package name, disable needless exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

Scanning areas

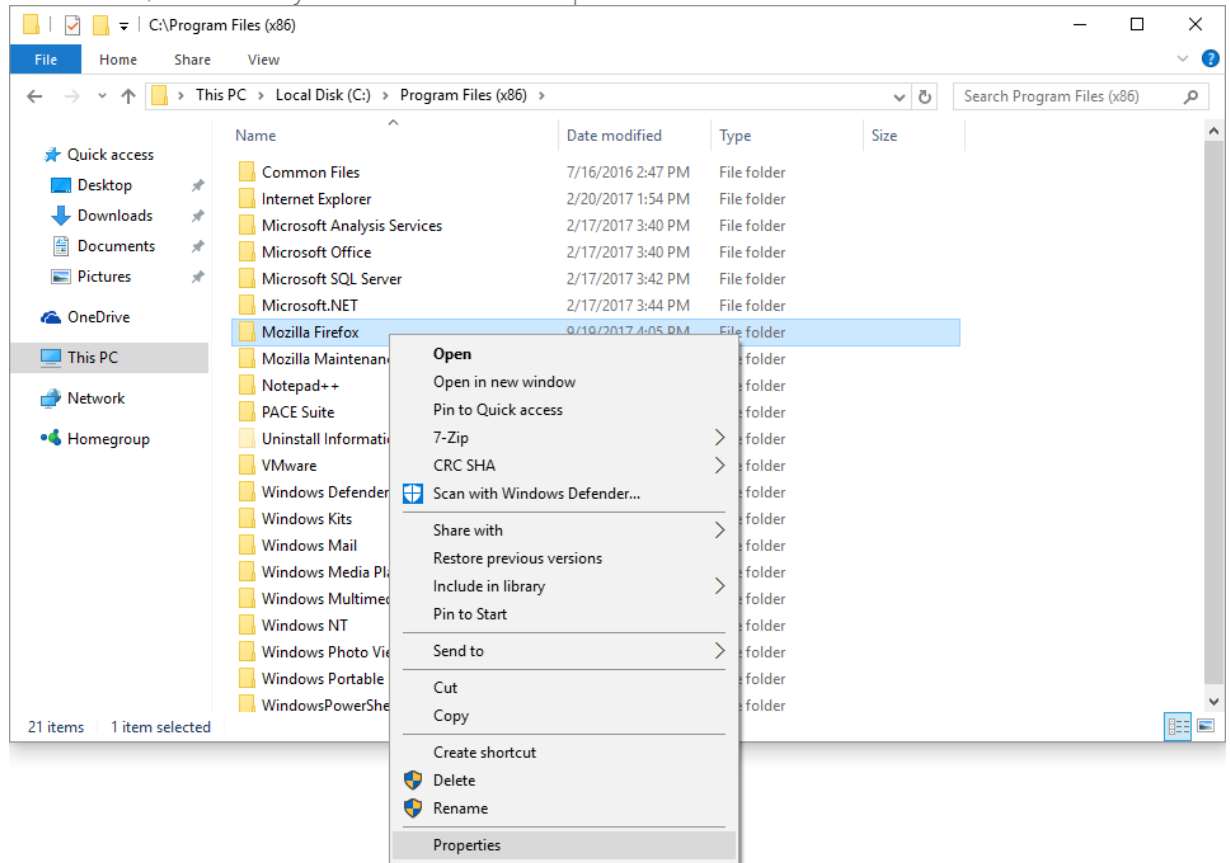
Application objects:

- ☒ Permissions
- ☒ Services
- ☒ Printers

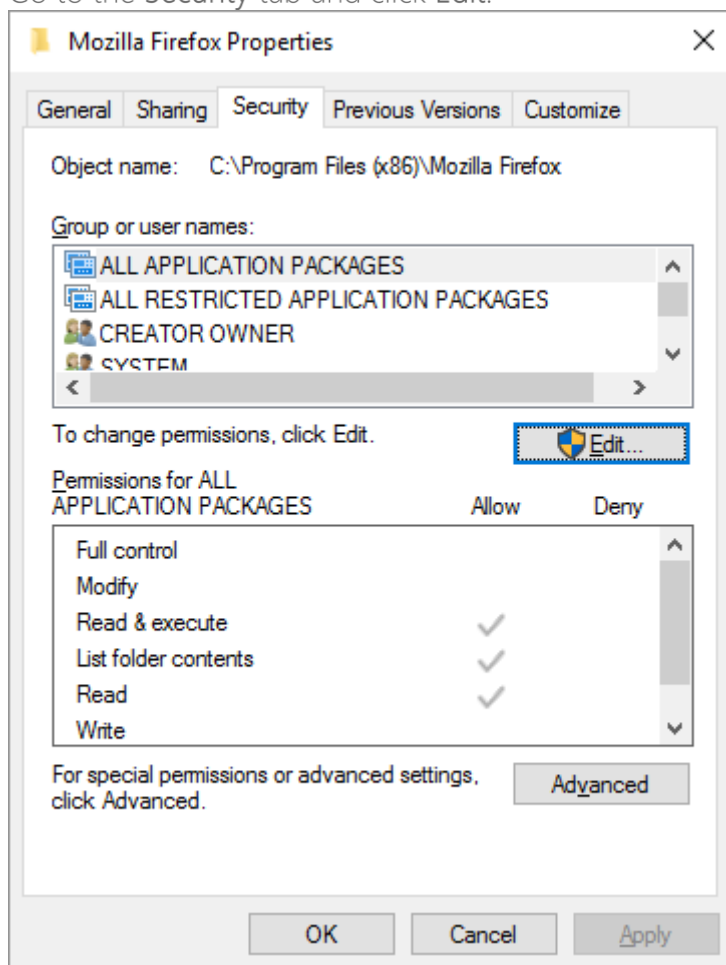
< Back **Next >** Cancel

- [7]. Now you can make any changes to the file system and registry, which you want to capture and include to the transform (MST) file. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.
- [8]. If you additionally need to change the default permission settings on a folder or a file and include them to the package, select **Properties** from the Windows Explorer context menu

of a folder, on which you want to set new permissions.

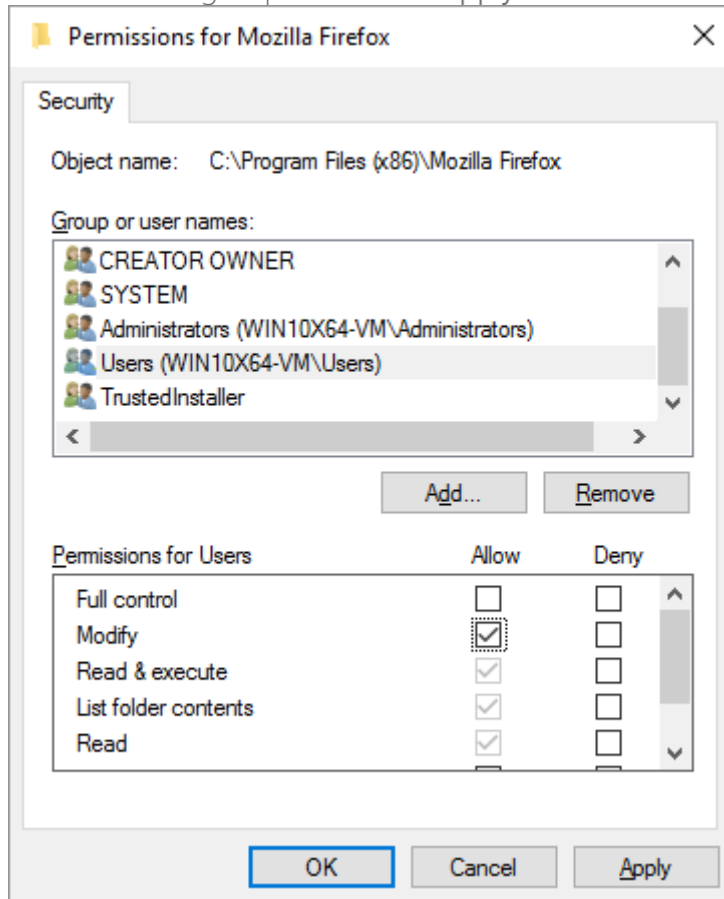


- [9]. Go to the Security tab and click Edit.

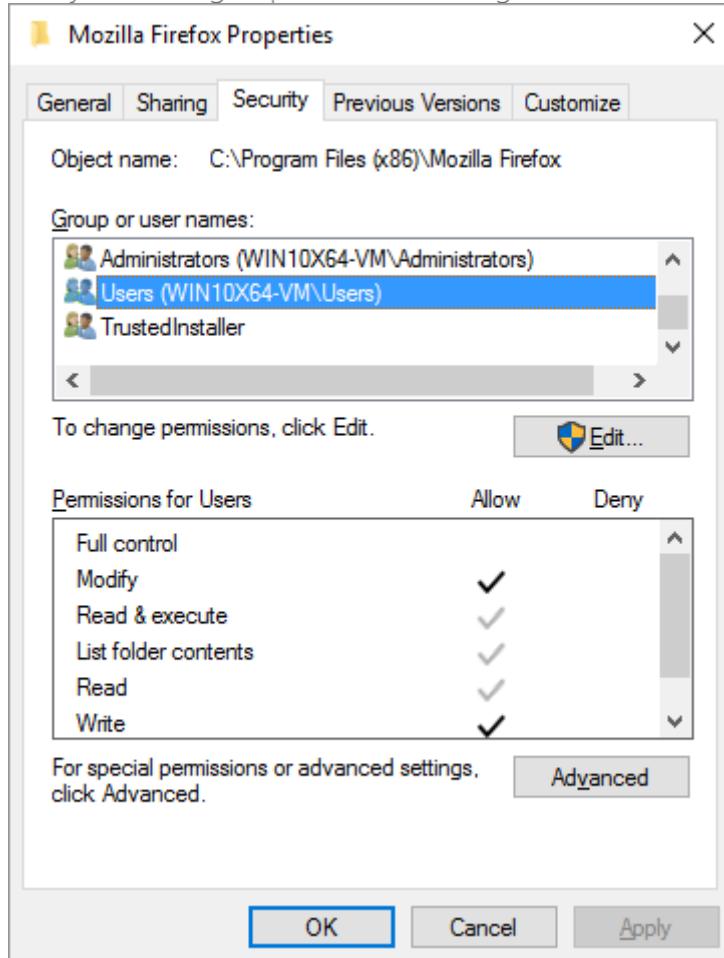


- [10]. Select a group or a user, for which you want to change the permissions and then select the necessary access rights. For example, let's set the 'Write' and the 'Modify' access rights

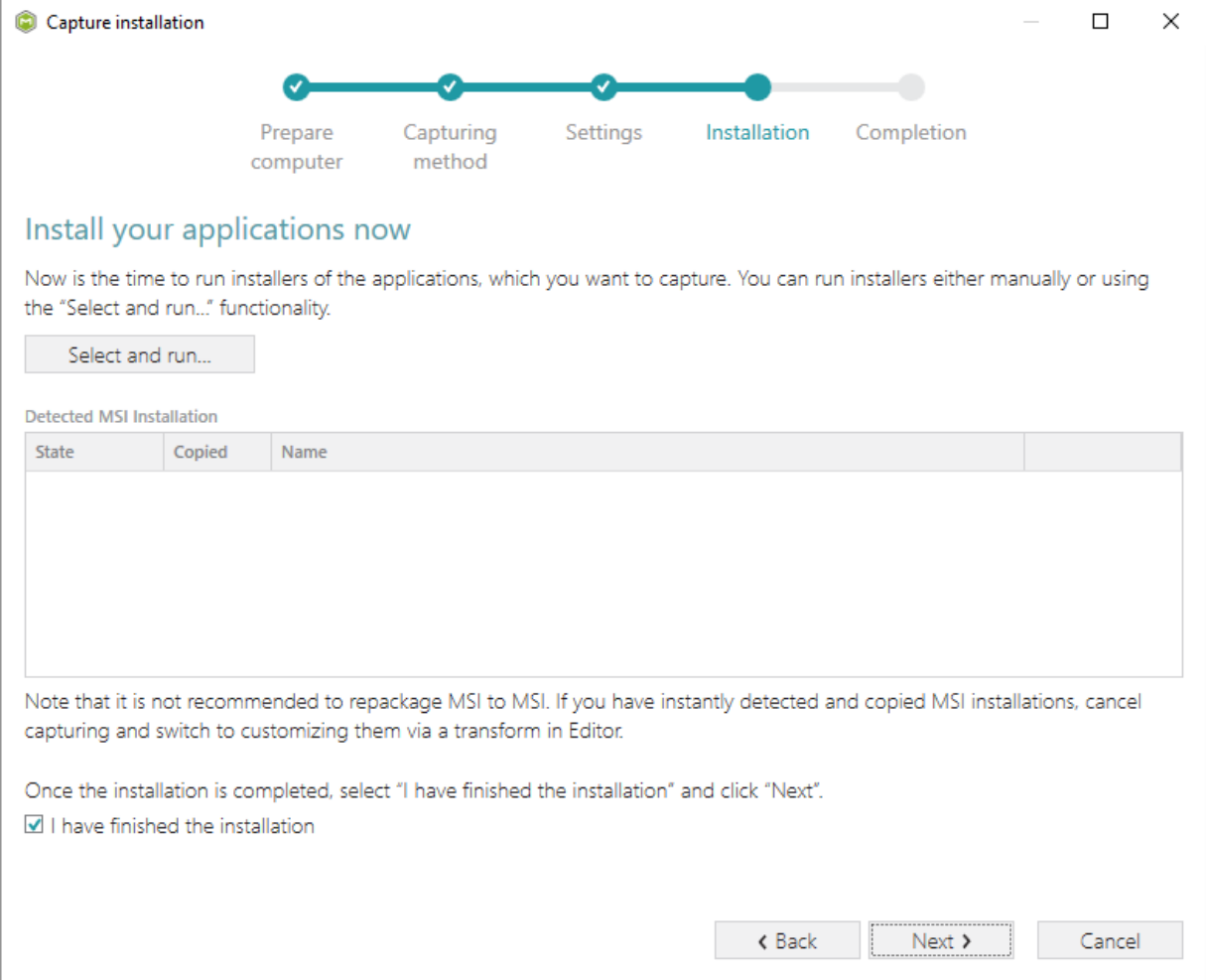
for the 'Users' group. Then click Apply and OK.



[11]. Verify the changed permission settings and click OK to close the window.



[12]. Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back Next > Cancel

- [13]. Wait a little, while the capturing process is finishing, filtering captured data and creating the project.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

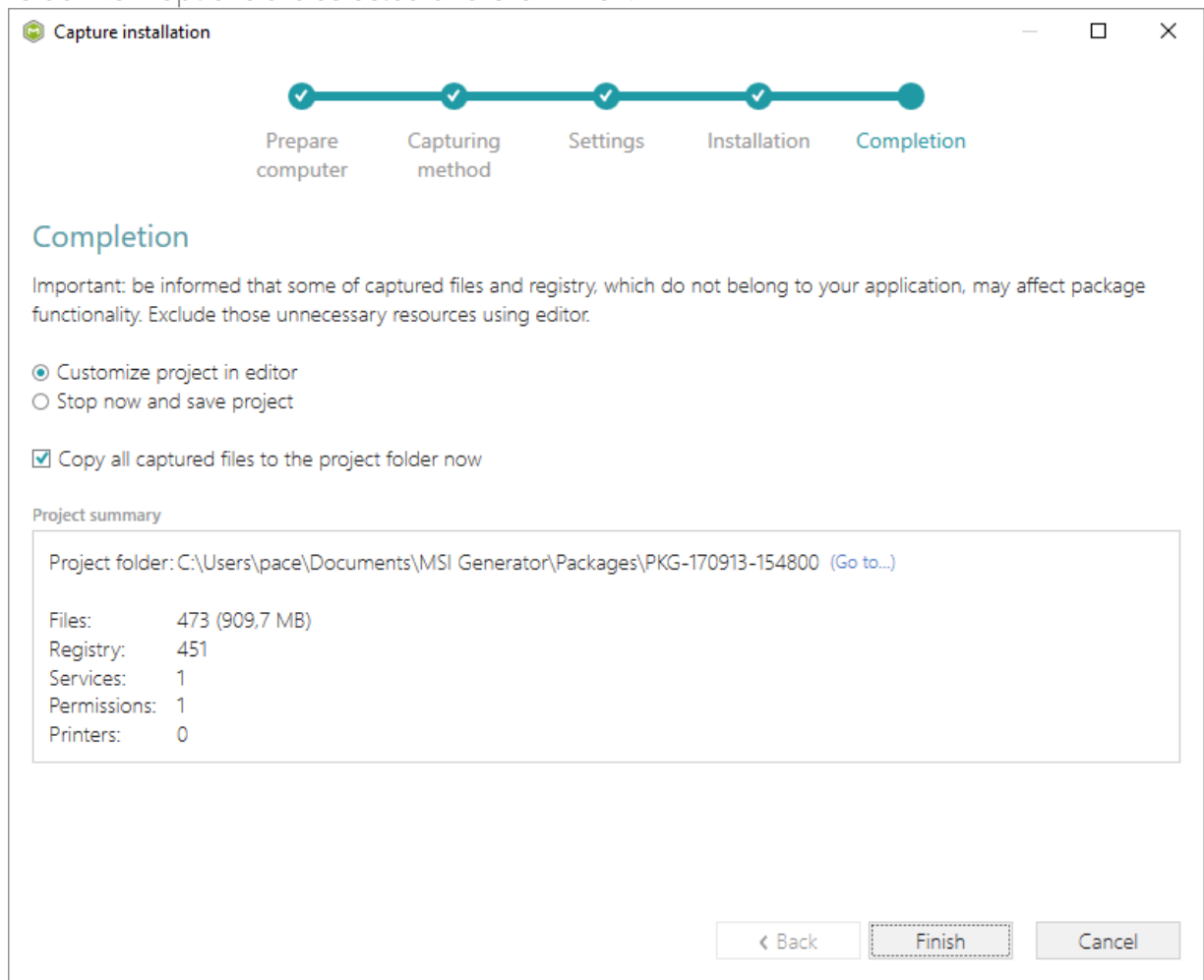
Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

00:08 Scanning Services

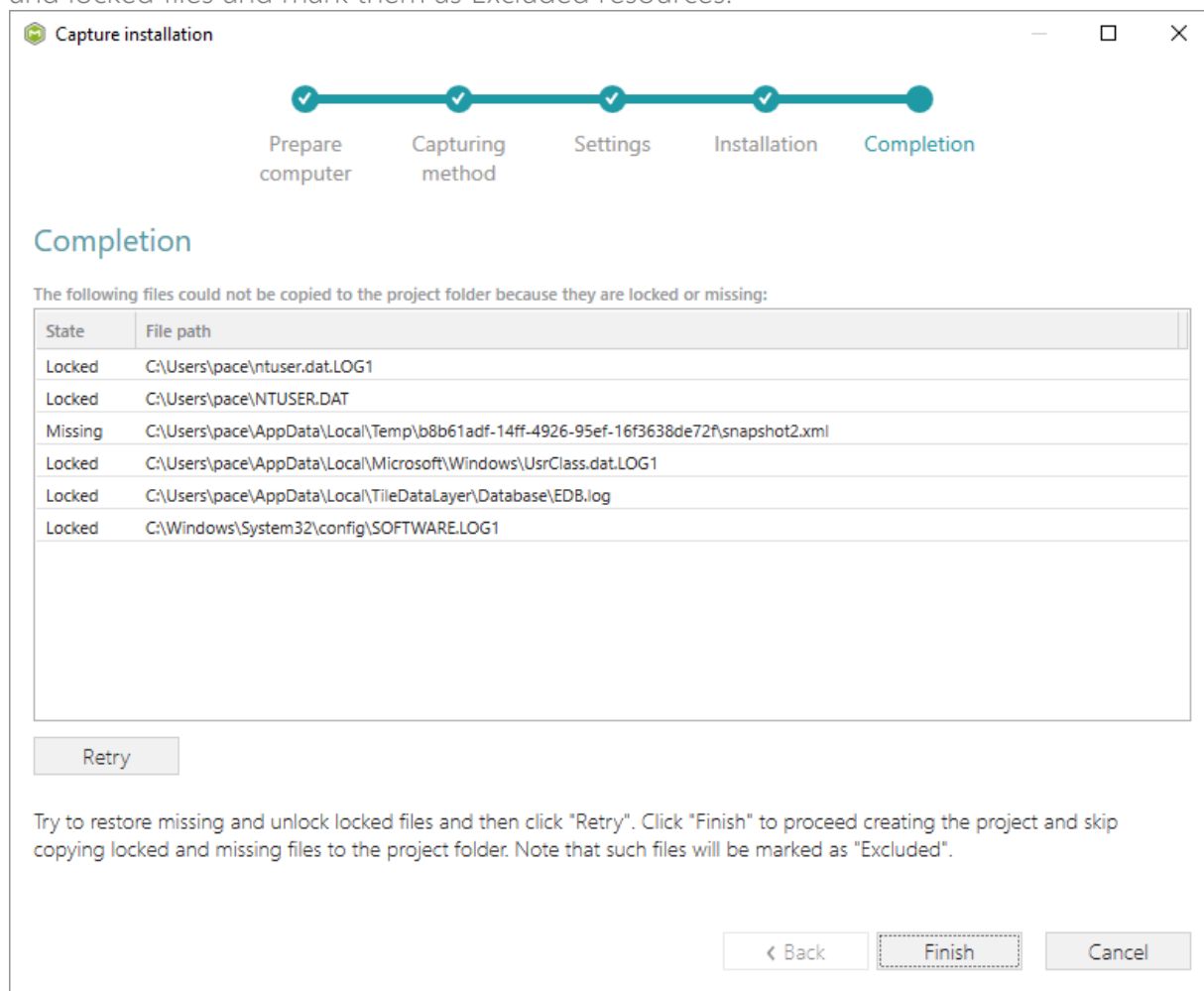
< Back Next > Cancel

- [14]. Leave selected the Customize project in editor and Copy all captured files to the project folder now options are selected and click Finish.



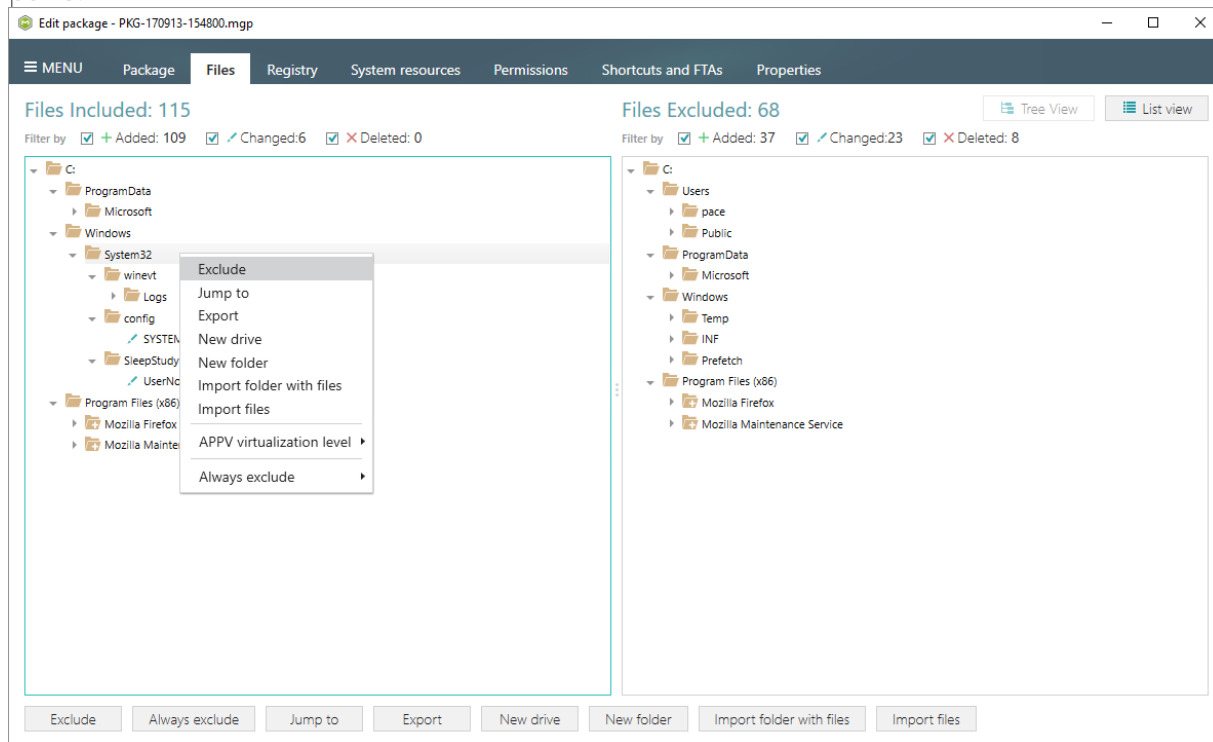
- [15]. The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing

and locked files and mark them as Excluded resources.

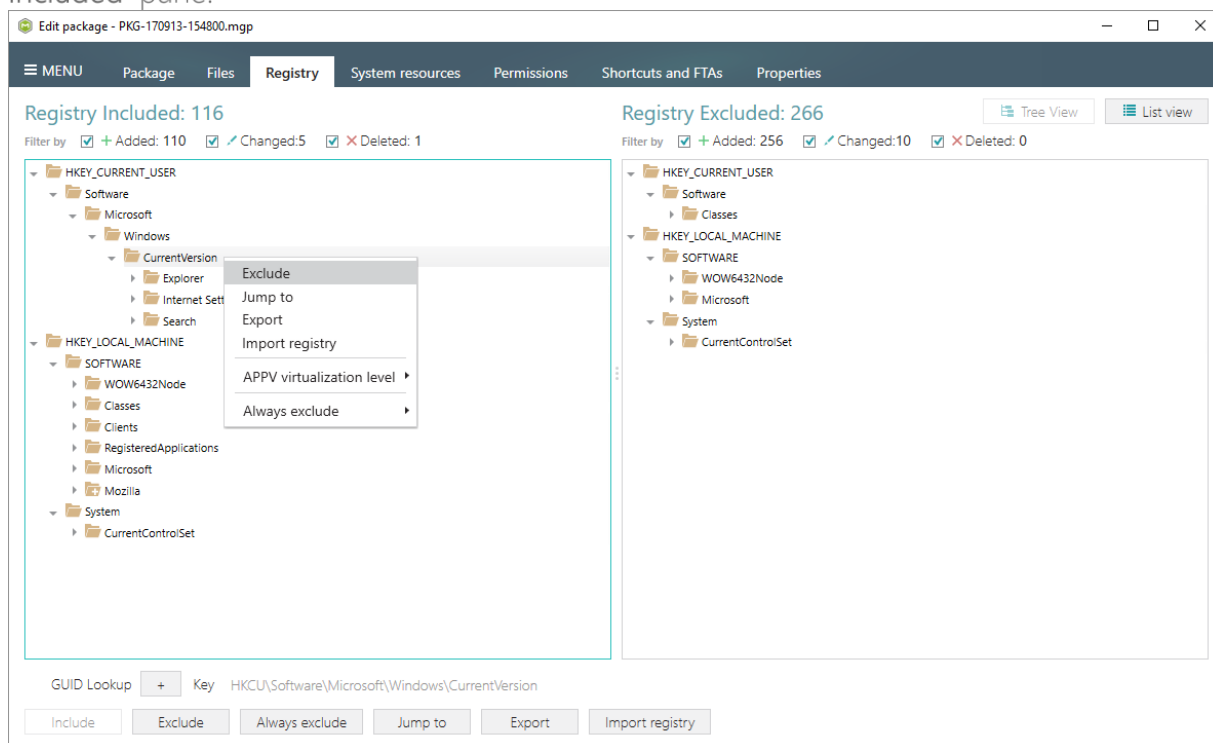


- [16]. Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).
- [17]. In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included'

pane.

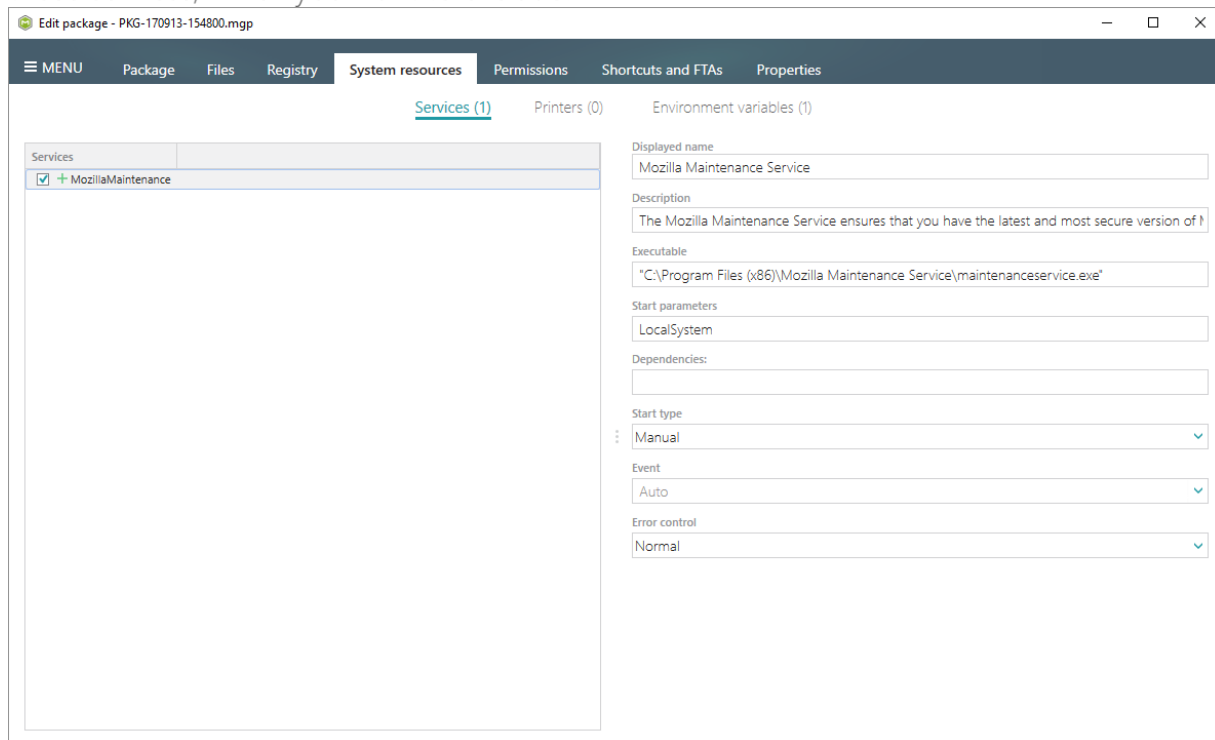


- [18]. In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

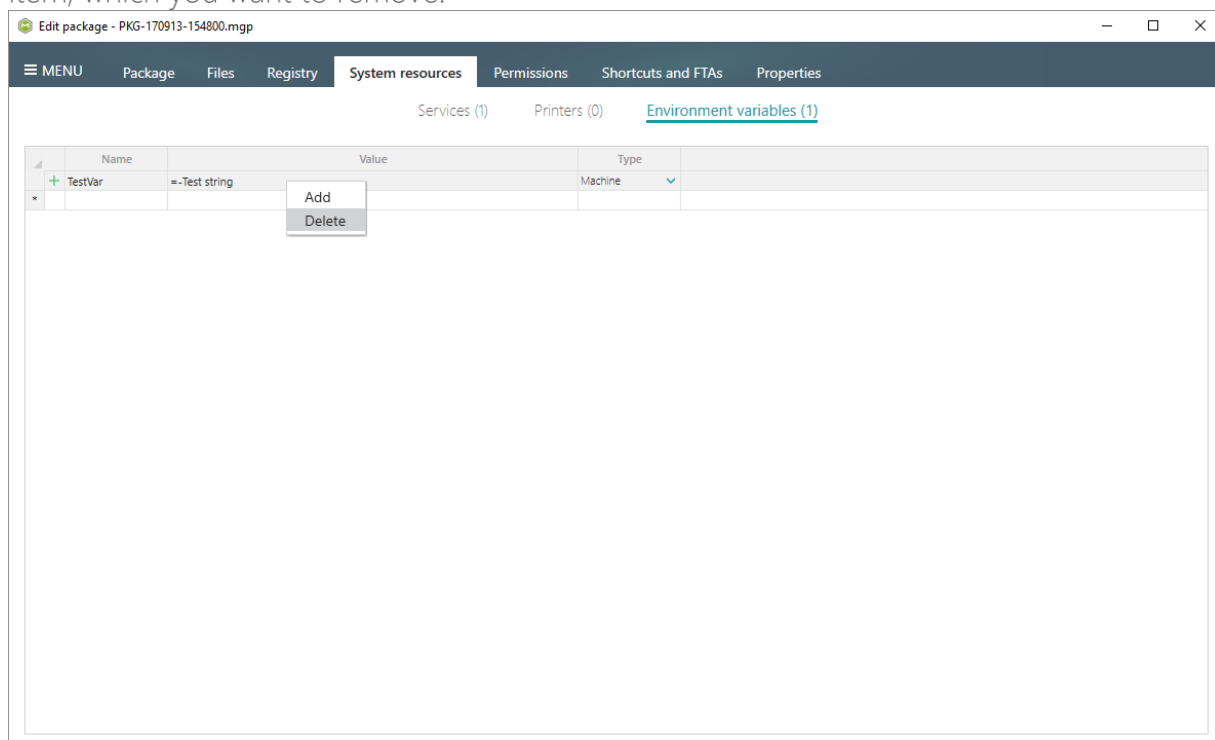


- [19]. In order to review and exclude unnecessary services, go to the System resources -> Services tab, and uncheck the checkbox, located before the service name in the list, for

those services, which you want to exclude.

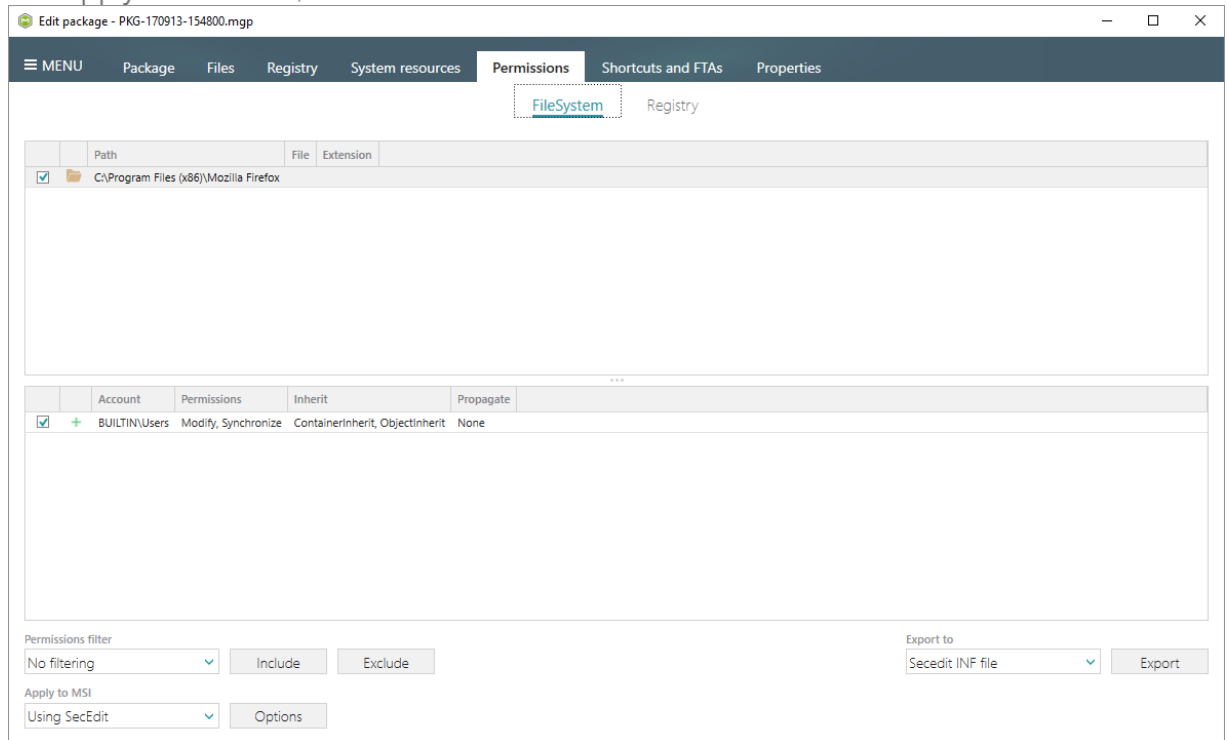


- [20]. In order to review and remove unnecessary Environment variables, go to the **System resources** -> **Environment variables** tab, and select **Delete** from the context menu of an item, which you want to remove.

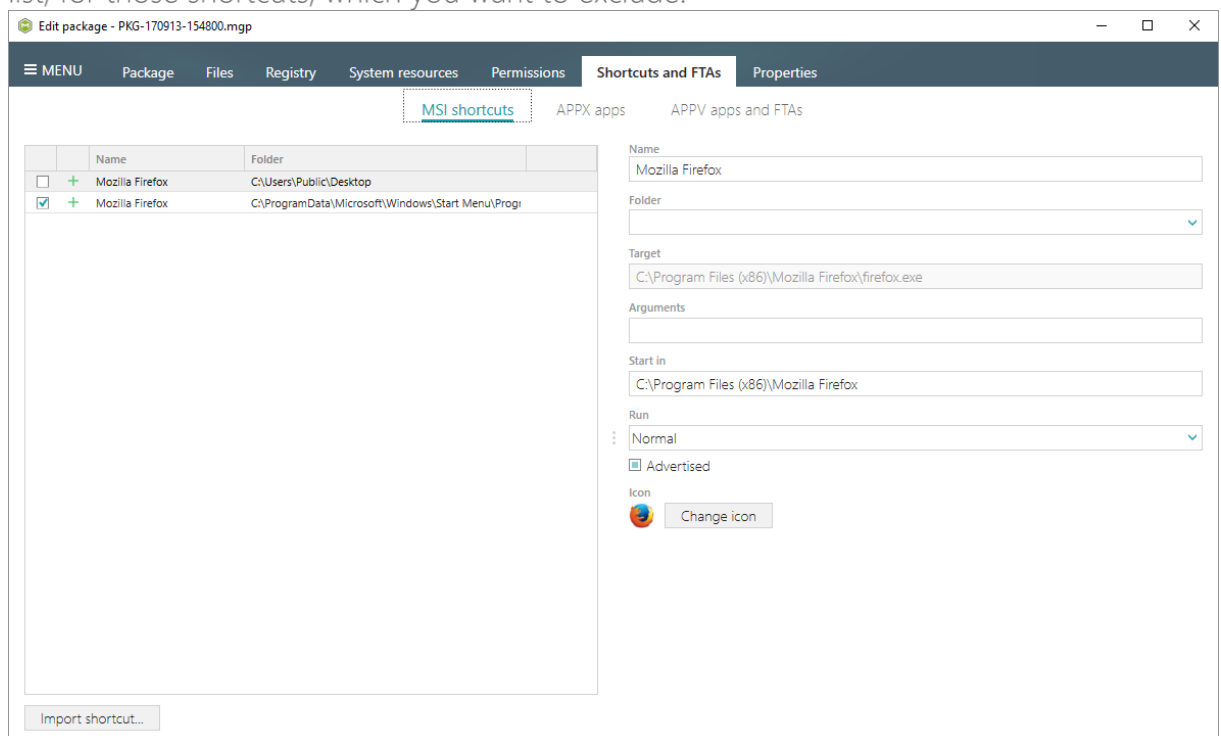


- [21]. On the **Permissions** tab you will find captured permissions for the file system and registry. For excluding unnecessary permission changes, either uncheck the checkbox, located before the path, for which permission changes were detected, or select **Do not apply** in

the Apply to MSI field, located in the bottom of the window.

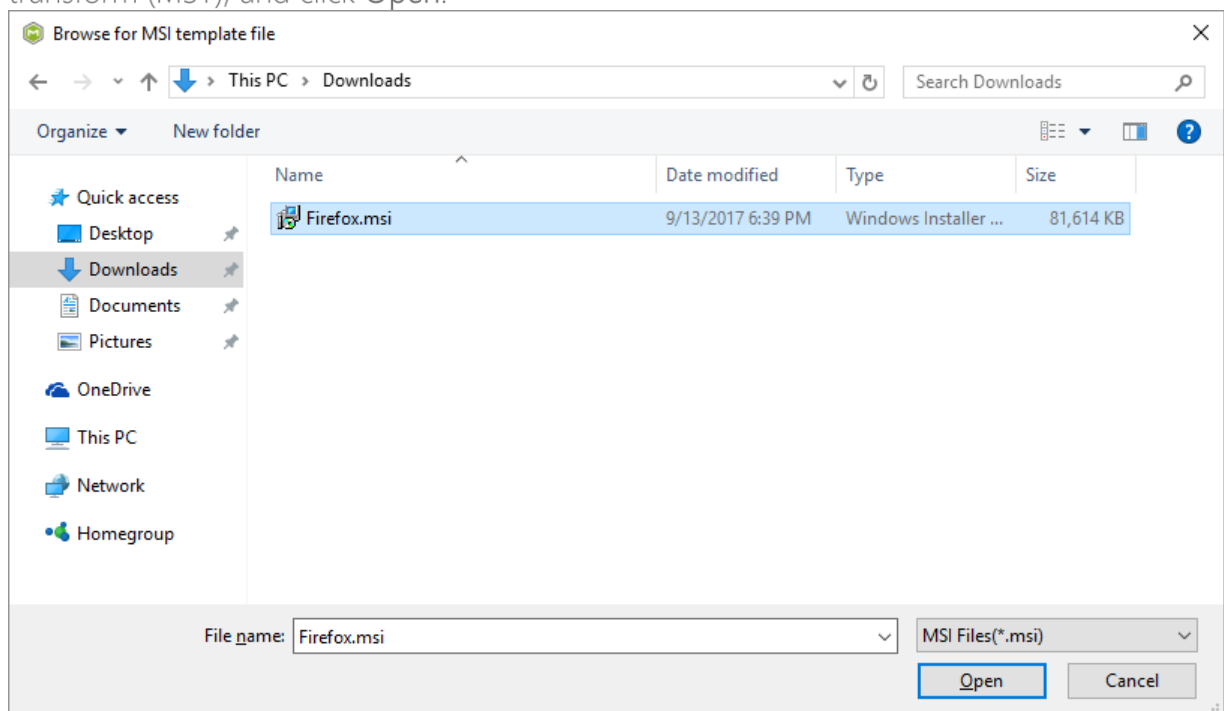


- [22]. In order to review and exclude unnecessary shortcuts, go to the Shortcuts and FTAs -> MSI shortcuts tab, and uncheck the checkbox, located before the shortcut name in the list, for those shortcuts, which you want to exclude.



- [23]. Finally, to build an MST from the project, navigate to the Package -> MST tab, click **Browse...**, located next to the MSI file name field.

- [24]. Choose an MSI package (e.g. Firefox.msi), against to which you want to create a transform (MST), and click **Open**.



- [25]. Update Application details such as name, publisher, version, language and click **Build MST** to generate a transform (MST) file. Note that the generated MST will contain only those resources that do not exist in the selected MSI package (in other words, MST will contain

only the difference between the project's and MSI resources).

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: New GUID...

Upgrade code: New GUID...

☐ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject:

Author: Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Intel Languages: 0

Transform Options

MSI settings profile: default Edit

MST file name: Firefox.mst Browse... Go to...

MSI file name: Firefox.msi Browse... Go to...

Transform

☒ Properties ☒ Update files ☒ Update registry

☒ Features ☒ Add files ☒ Add registry

Build log Detected MSI installations Open log

Type	Elapsed	Step

Elapsed time: 00:00

Open MST Build MST

[26]. Once the MST file is built, click **Go to...**, located next to the MST file name field, to open the MST file containing folder in Windows Explorer.

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: {6E606E8F-95F8-4F38-B901-9AA159F13DC0} New GUID...

Upgrade code: {2B3587BC-9CD5-4639-B617-8350C1888050} New GUID...

☐ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject:

Author: Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Intel Languages: 0

Transform Options

MSI settings profile: default Edit

MST file name: Firefox.mst Browse... Go to...

MSI file name: Firefox.msi Browse... Go to...

Transform

☒ Properties ☒ Update files ☒ Update registry

☒ Features ☒ Add files ☒ Add registry

Build log Detected MSI installations Open log

Type	Elapsed	Step
	00:00:14	Operation was completed successfully
	00:00:14	Operation was completed successfully
	00:00:14	Writing data to the _Validation table
	00:00:14	Writing data to the CreateFolder table
	00:00:14	Writing data to the AdvtExecuteSequence table
	00:00:14	Writing data to the InstallExecuteSequence table
	00:00:14	Writing data to the CustomAction table
	00:00:14	Writing data to the MsiAssemblyName table
	00:00:13	Writing data to the MsiAssemblyName table

Elapsed time: 00:00:15

Open MST Build MST

3.3 New MSP

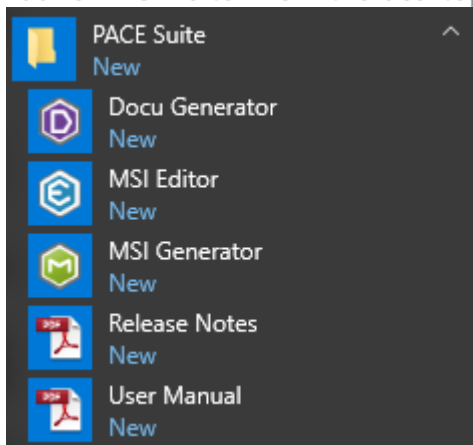
Choose a scenario that better suits your needs:

- **Create MSP Based On Difference**, described in section 3.3.1
Create a Patch (MSP) package, based on differences between two MSI packages.
- **Save Changes to MSP**, described in section 3.3.2
Save all your changes, made to the opened MSI database in MSI Editor, as a Patch (MSP) package.

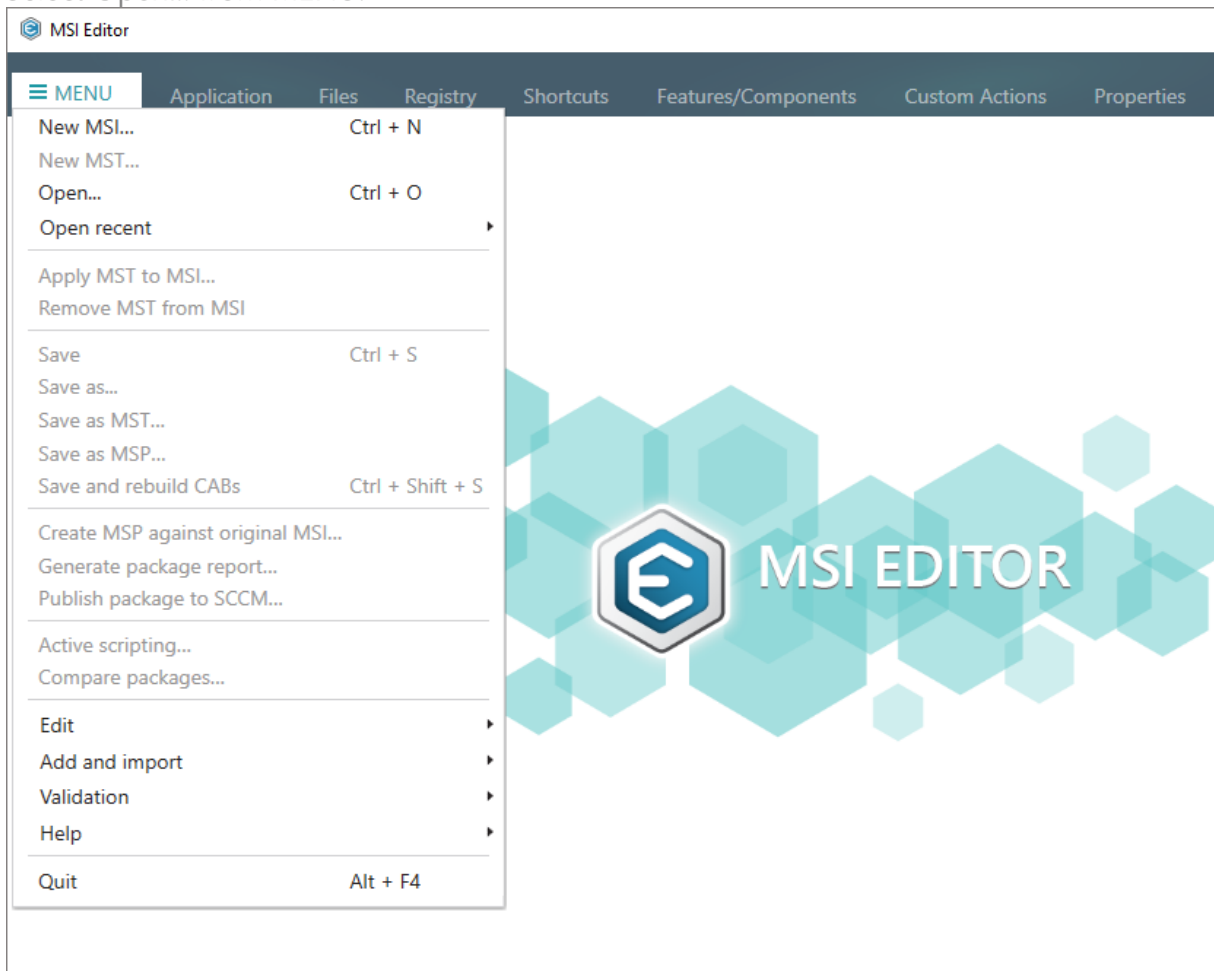
3.3.1 Create MSP Based On Difference

Create a Patch (MSP) package, based on differences between two MSI packages.

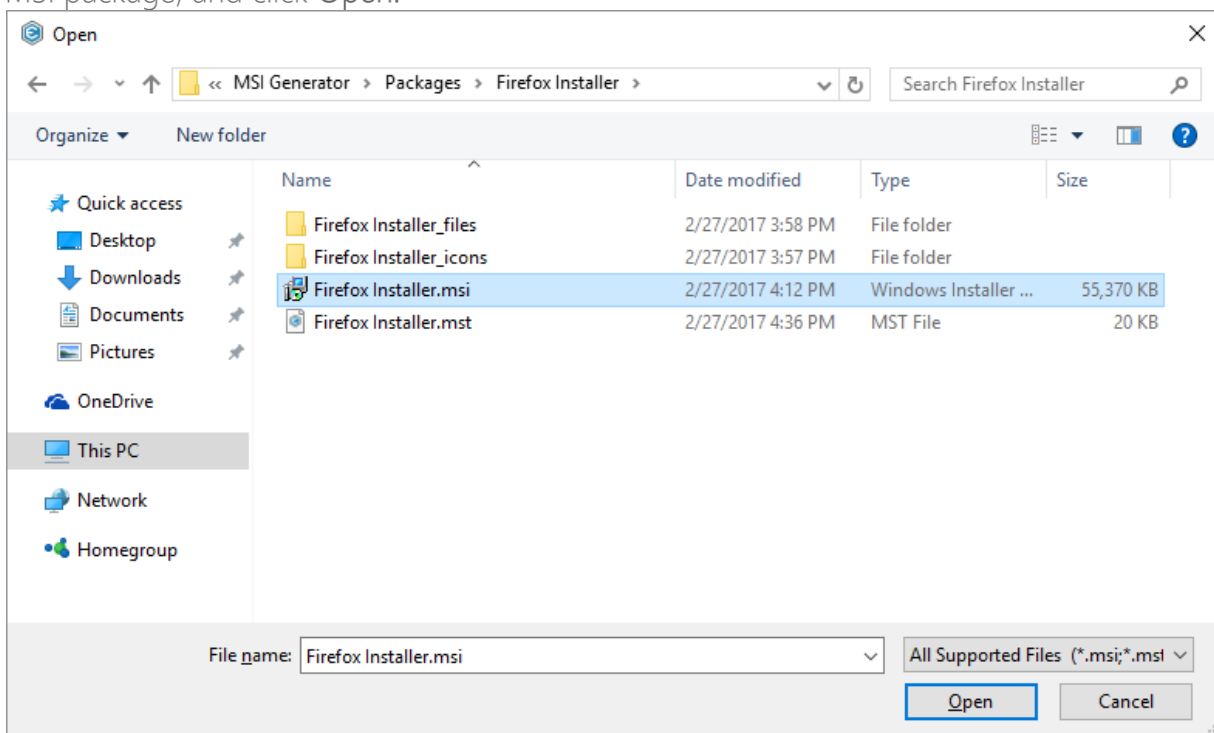
- [1]. Launch MSI Editor from the desktop or the start menu shortcut.



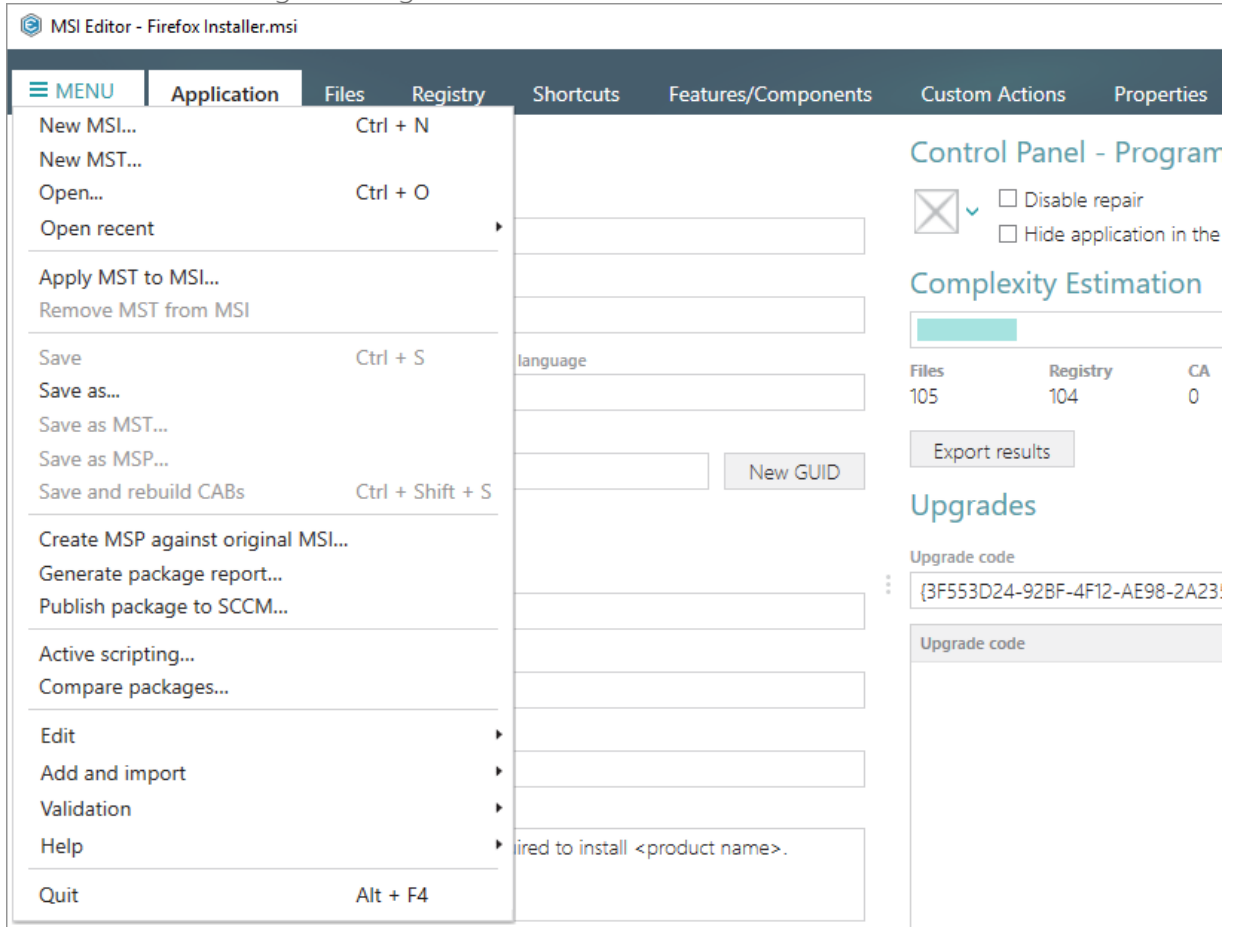
[2]. Select Open... from MENU.



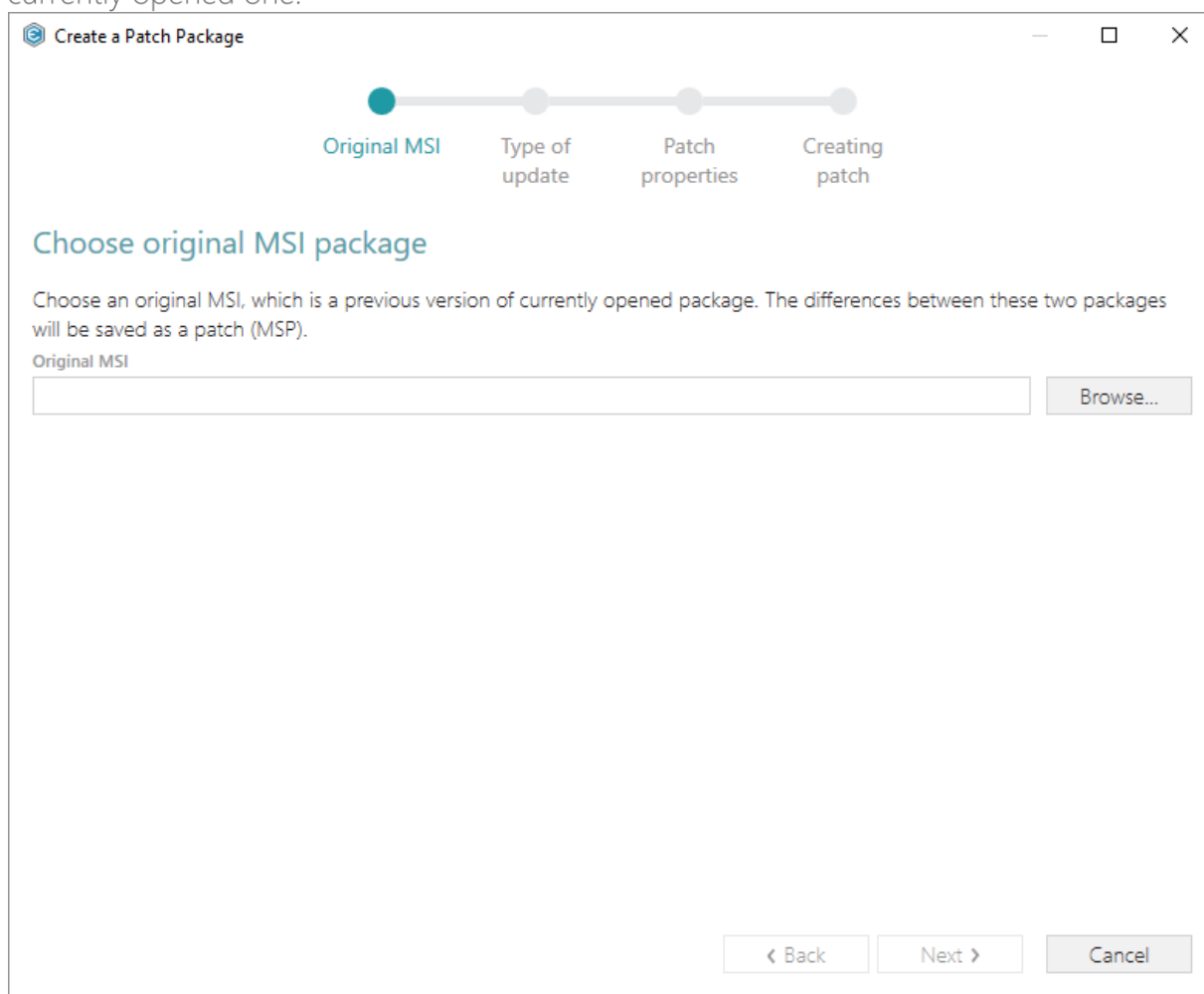
[3]. Choose a recent MSI package, containing new resources in comparison to the previous MSI package, and click Open.



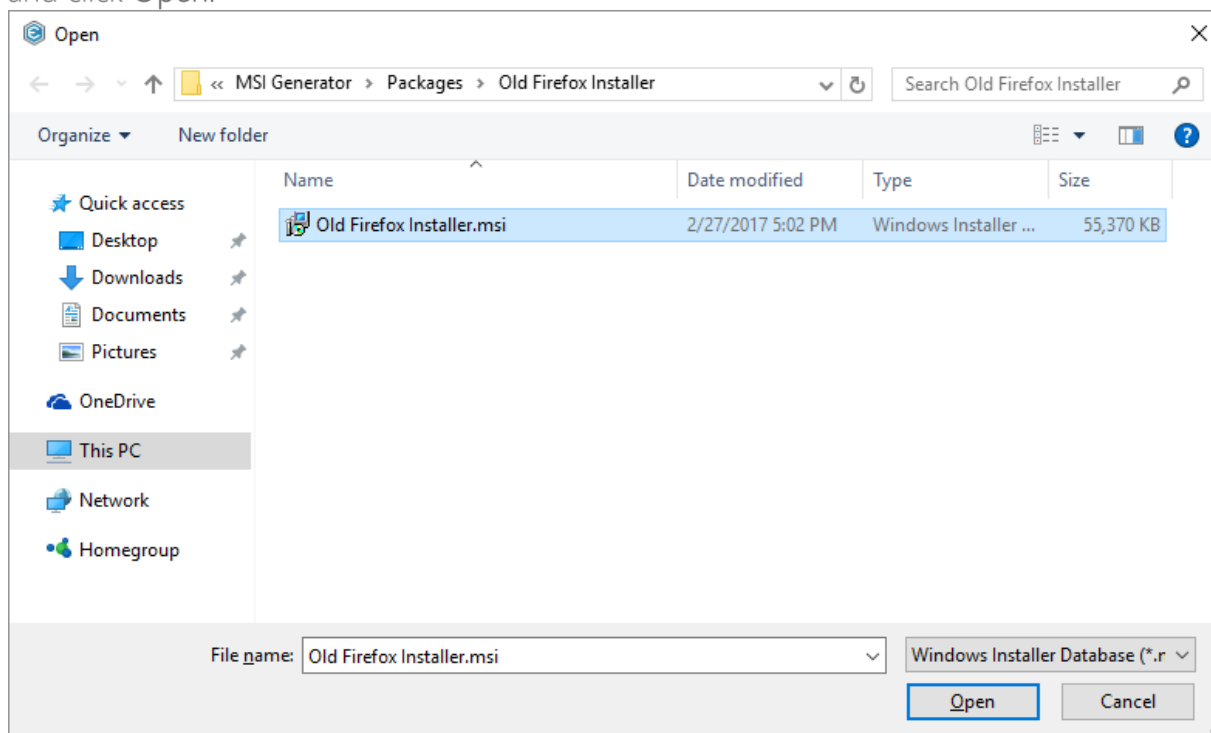
[4]. Select Create MSP against original MSI... from MENU.



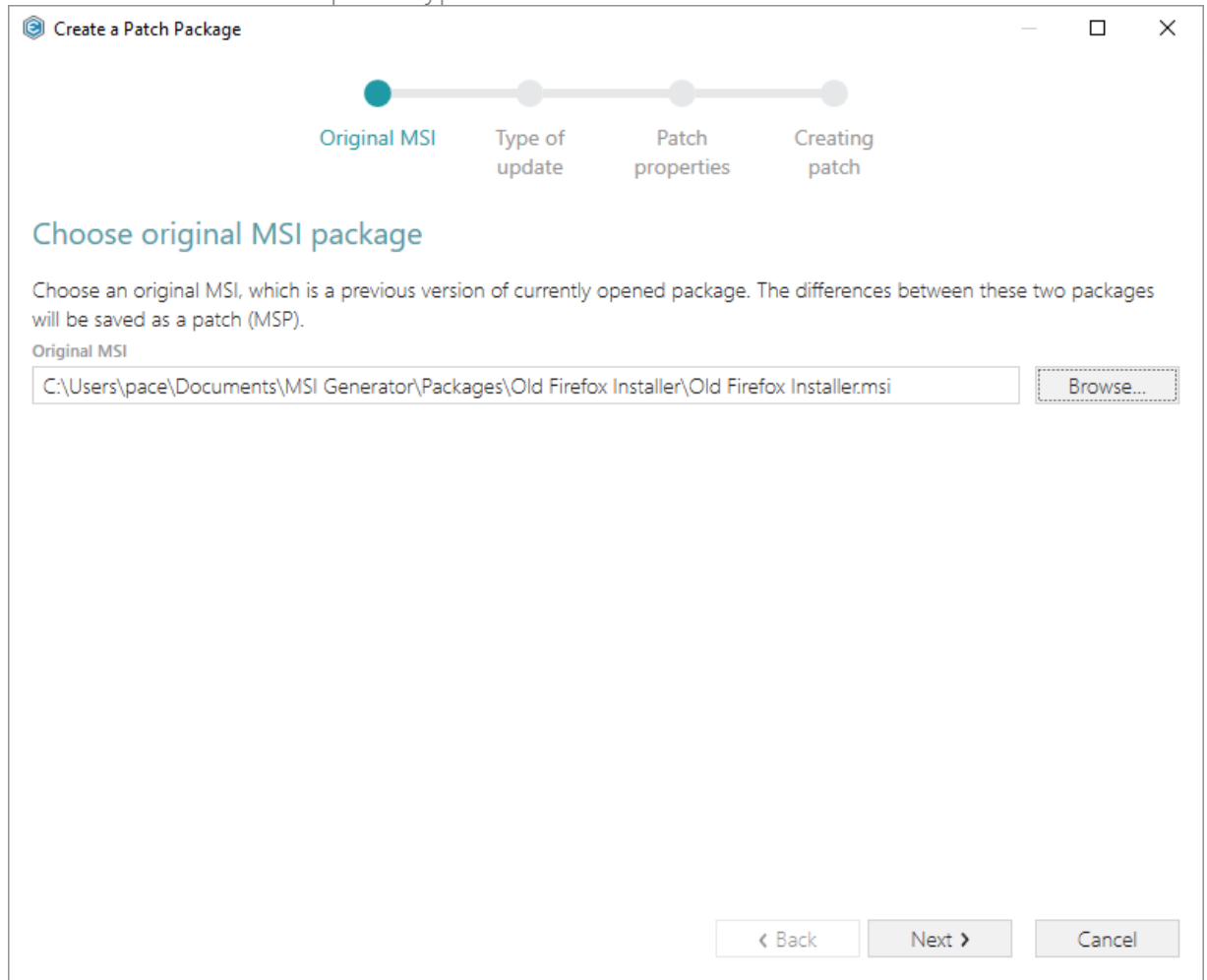
- [5]. Click **Browse...** to choose an original MSI package, which is a previous version of the currently opened one.



- [6]. Choose an original MSI package, which is a previous version of the currently opened one, and click **Open**.



- [7]. Click Next to define an update type.



- [8]. Increase a **Product version** value for the minor and major update and leave default one for the small update. Generate new **Product code** only for the major update and leave default one for the minor and small update. If needed, update a **Target product name** value in order to change the Product Name of the updated application. Click **Next** to

select a patch properties.

Create a Patch Package

Original MSI

Type of update

Patch properties

Creating patch

Type of update

Increase version for minor and major update and leave default value for small update

Product version

Generate new code only for major update and leave default value for minor and small update

Product code

New GUID

Target product name

[Review the instructions to create a patch package successfully...](#)

< Back

Next >

Cancel

- [9]. Update Patch Display name, Description and select the necessary Patch properties. Click Create to create the Patch (MSP) package.

Create a Patch Package

Progress bar: Original MSI (✓), Type of update (✓), Patch properties (●), Creating patch (○)

Patch properties

Display name
Mozilla Firefox 51.0.1 (x86 en-US) 51.0.1 Patch

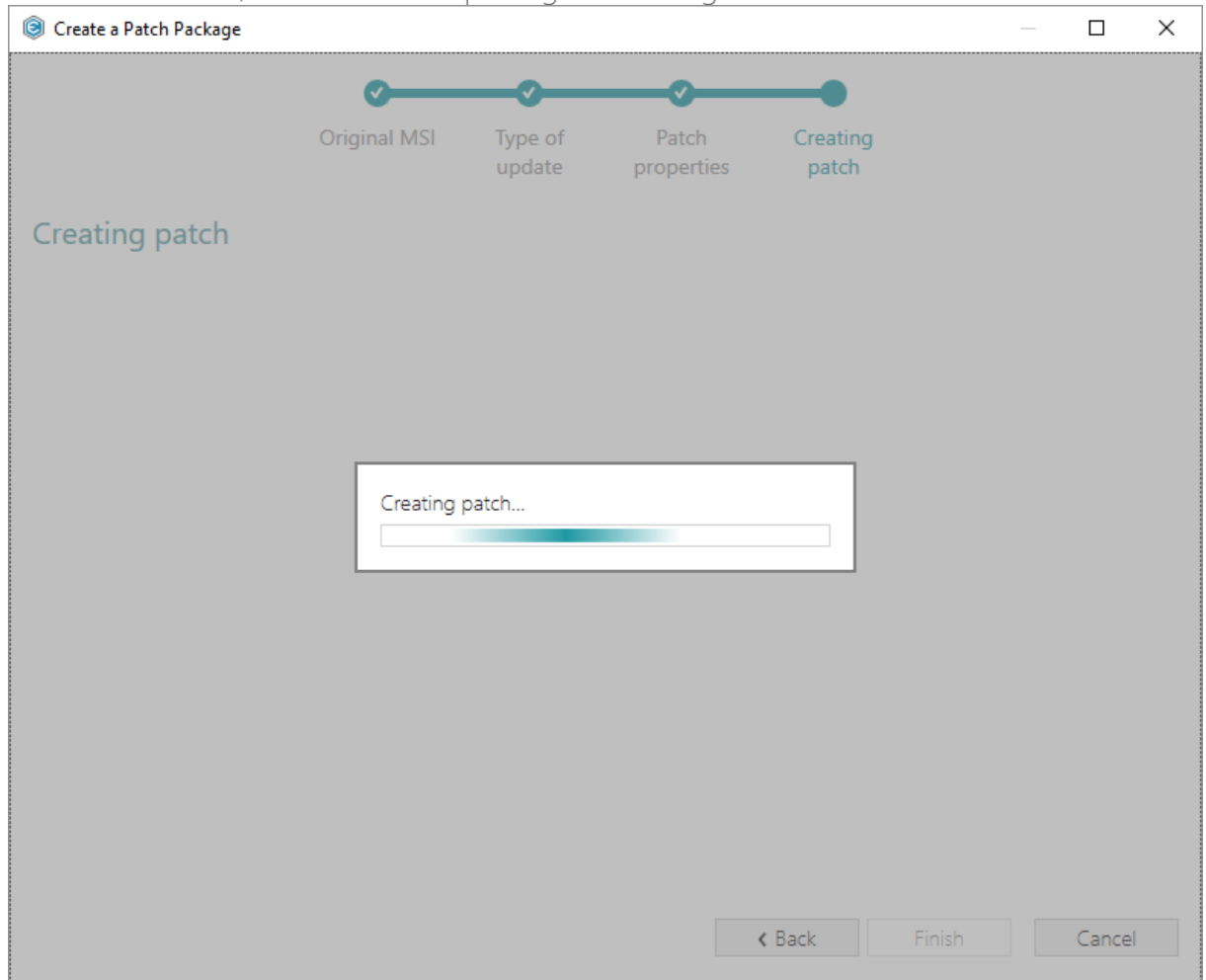
Description
Patch description

☒ Make this patch uninstallable
The only method to remove a patch that is not uninstallable is to uninstall the patched application and then reinstall the application without reapplying the patch.

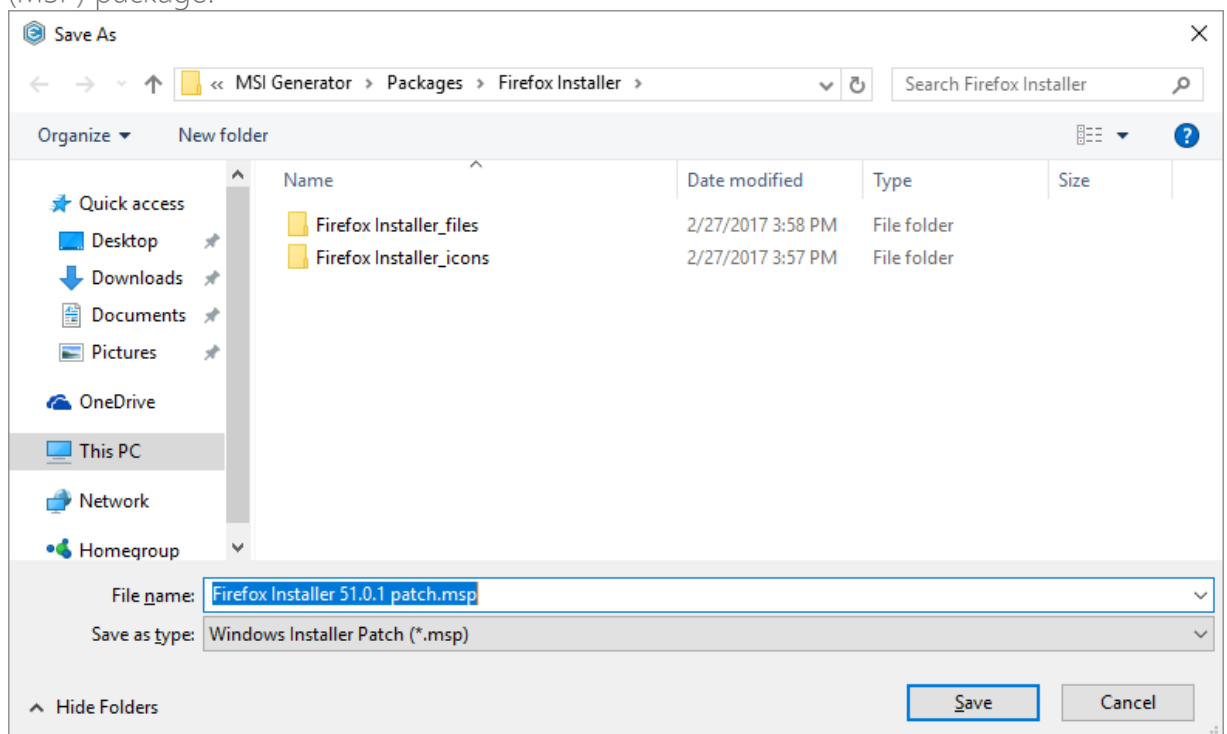
☐ Include whole files only
Changed files are to be included in their entirety when creating the patch package instead of creating a binary file patch. The patch files will be bigger in size but the API runs faster.

Buttons: < Back, Create >, Cancel

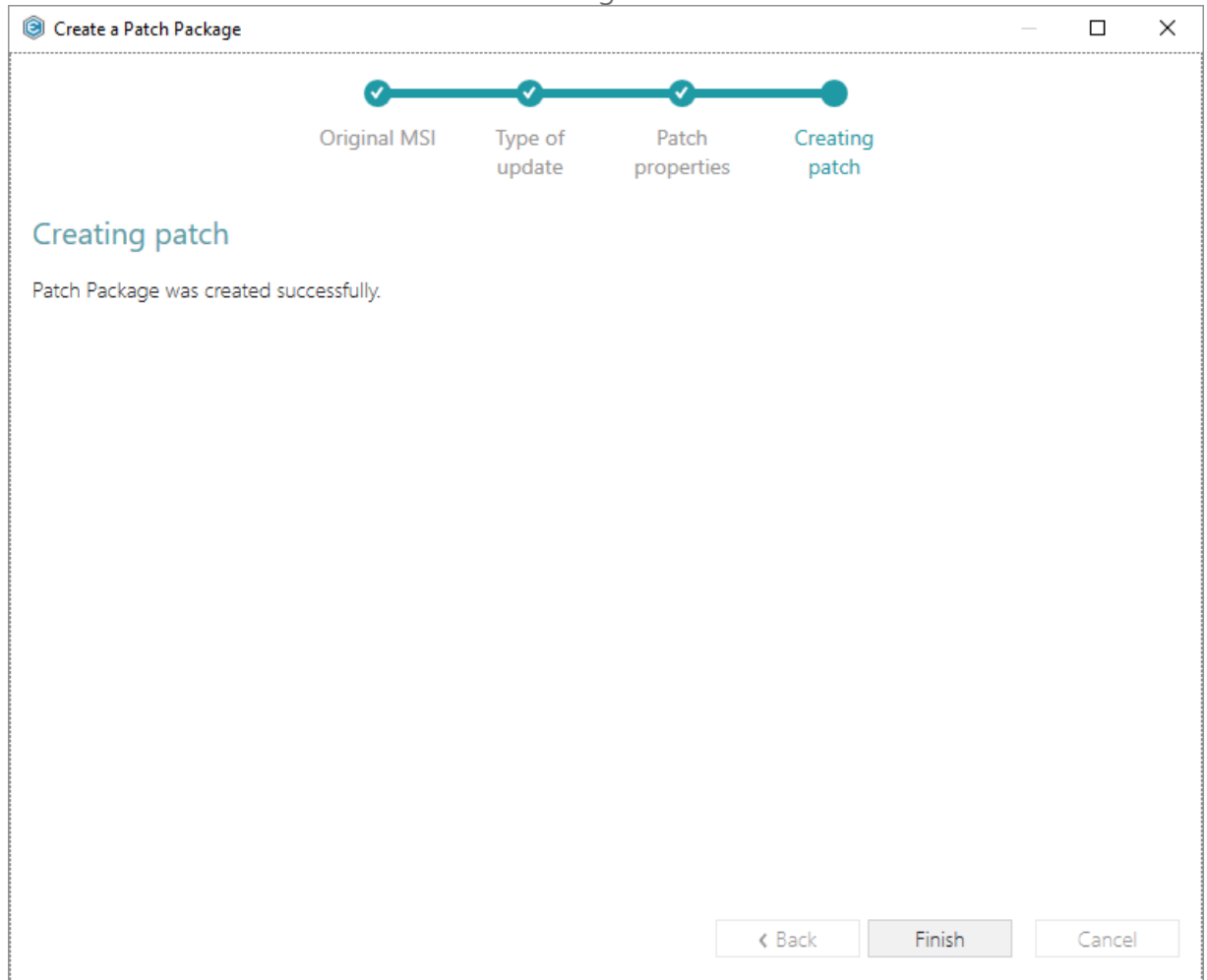
[10]. Please wait a little, while the Patch package is creating.



[11]. Choose a Patch name and a destination location and click **Save** to save the created Patch (MSP) package.



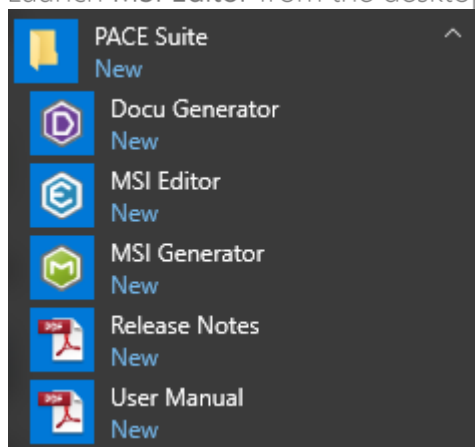
[12]. Click Finish to close the Create a Patch Package Wizard.



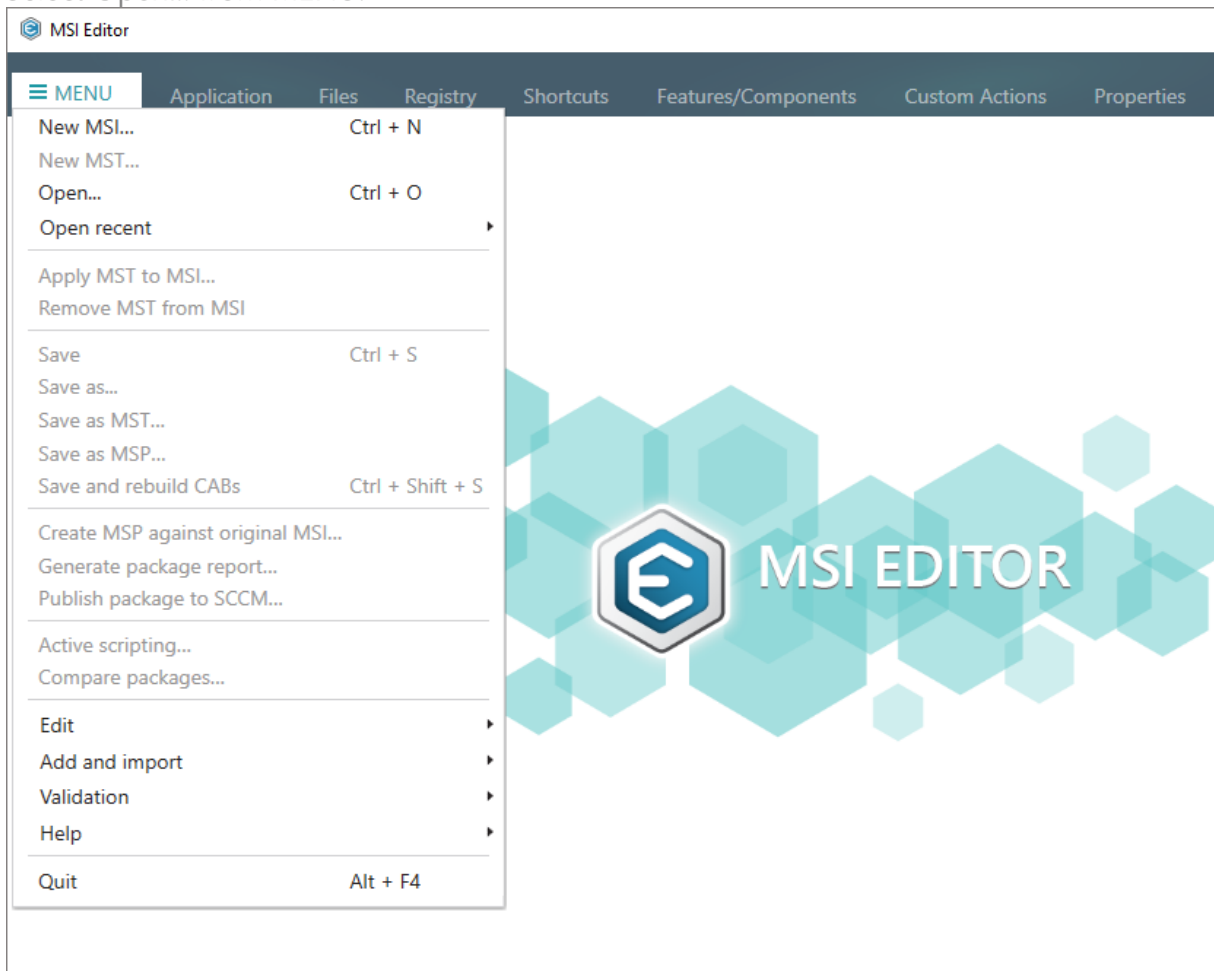
3.3.2 Save Changes to MSP

Save all your changes, made to the opened MSI database in MSI Editor, as a Patch (MSP) package.

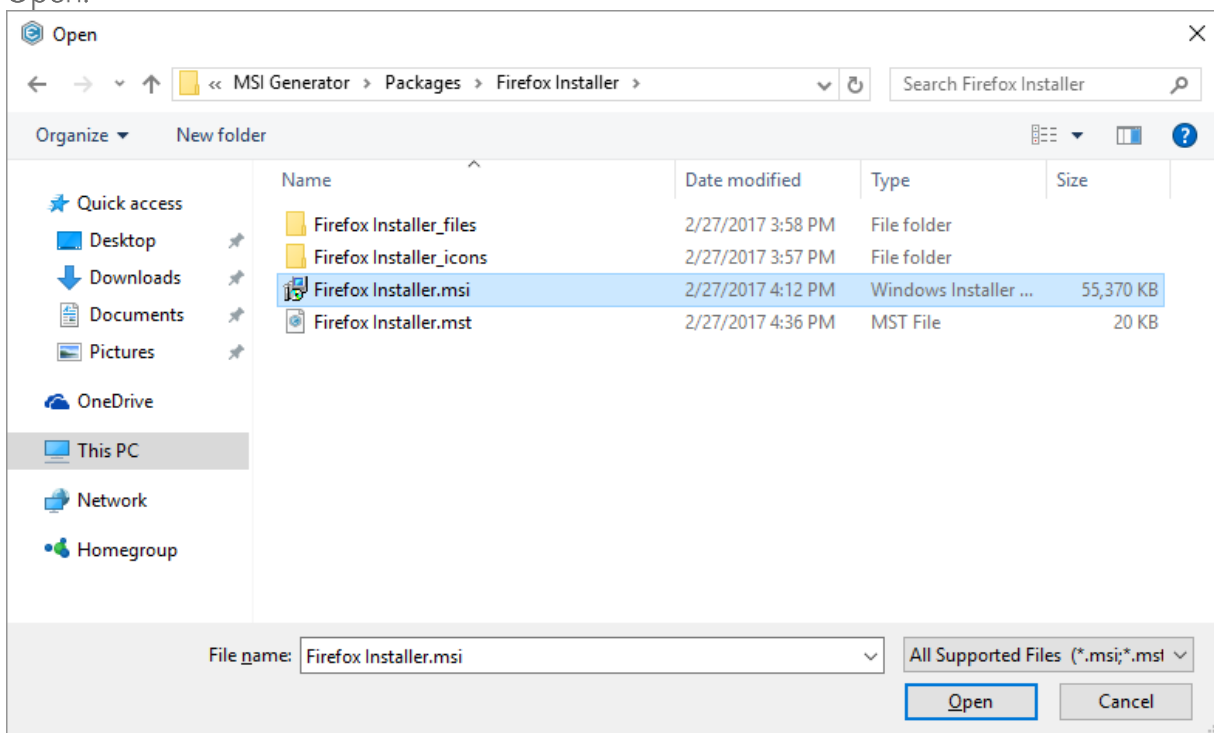
[1]. Launch MSI Editor from the desktop or the start menu shortcut.



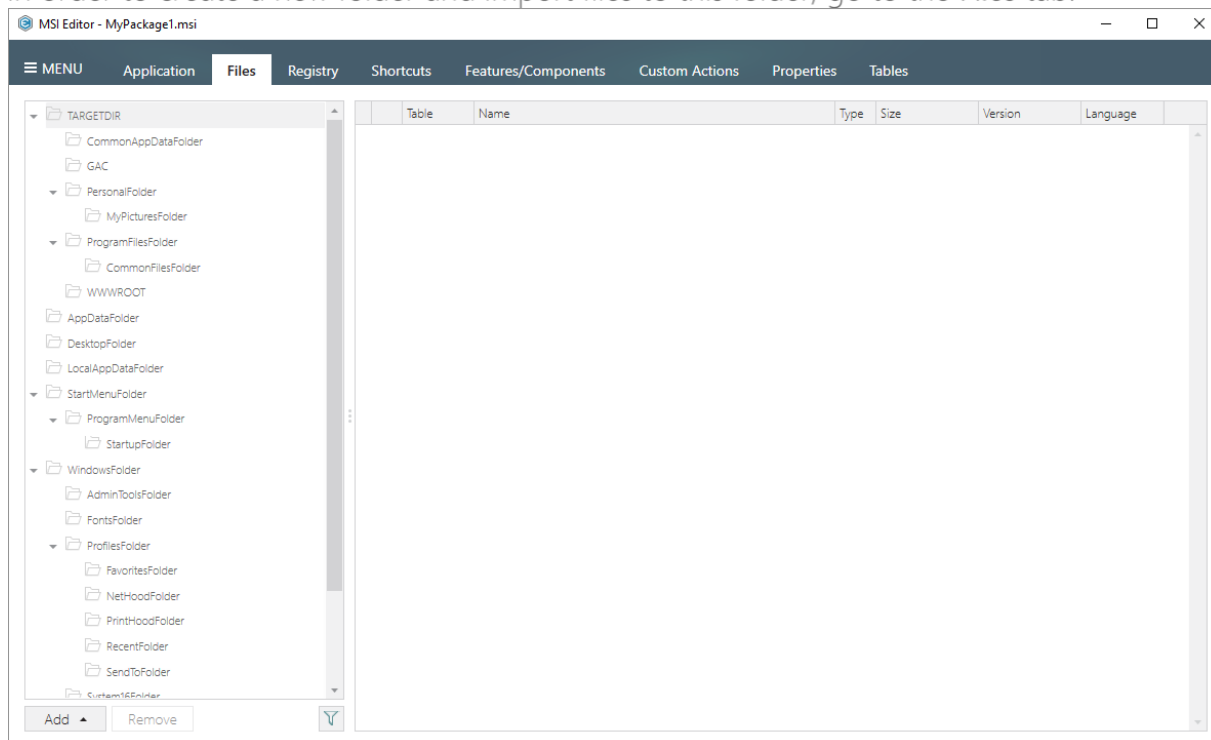
[2]. Select Open... from MENU.



[3]. Choose an MSI package, for which you want to create a Patch (MSP) package, and click Open.

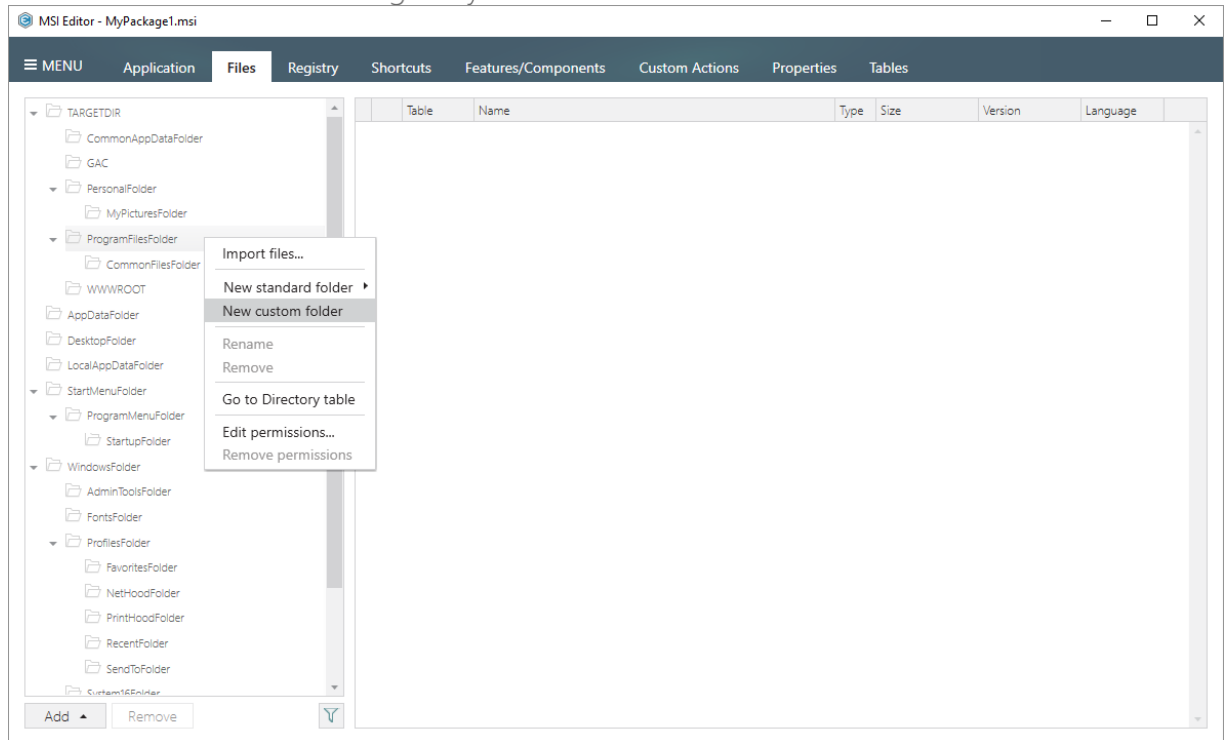


- [4]. Now you can start adding the necessary resources, which you want to include to the Patch (MSP) package, using MSI Editor. The steps from [5] to [13] describe how to create a new folder and import files to this folder; the steps from [14] to [22] describe how to create a new registry key, value, and import registry entries from the REG files; the steps from [23] to [29] describe how to create a new and import existing shortcuts; and the steps [30]-[35] describe how to save all these changes to the Patch (MSP) package.
- [5]. In order to create a new folder and import files to this folder, go to the Files tab.

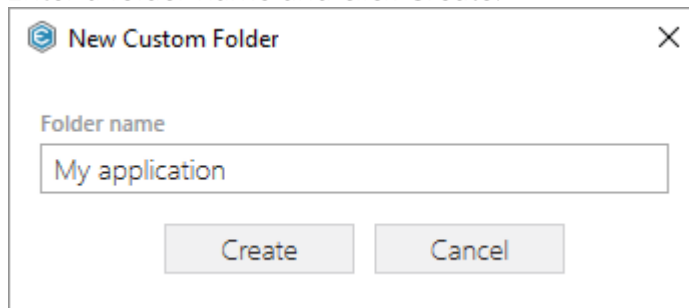


- [6]. Select **New custom folder** from the context menu of a folder, where you want to create a new folder. Note that standard MSI folders are displayed using the grey folder icon and

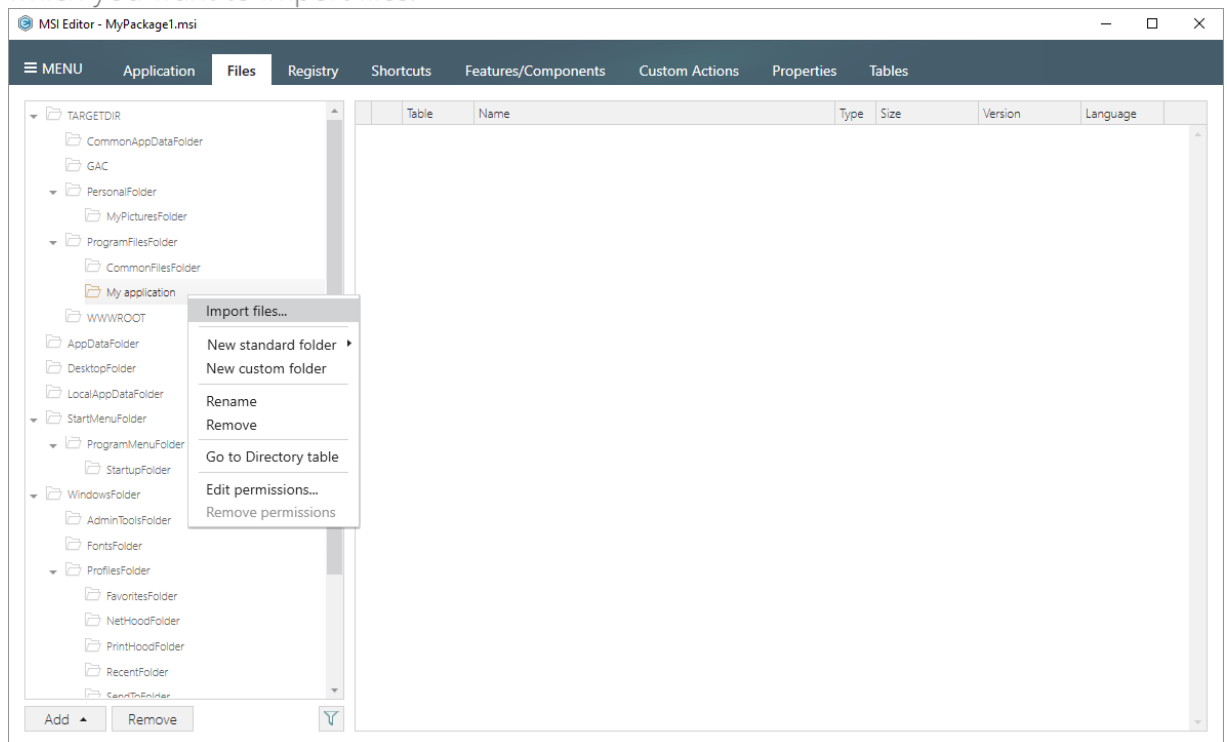
the user-defined ones – using the yellow folder icon.



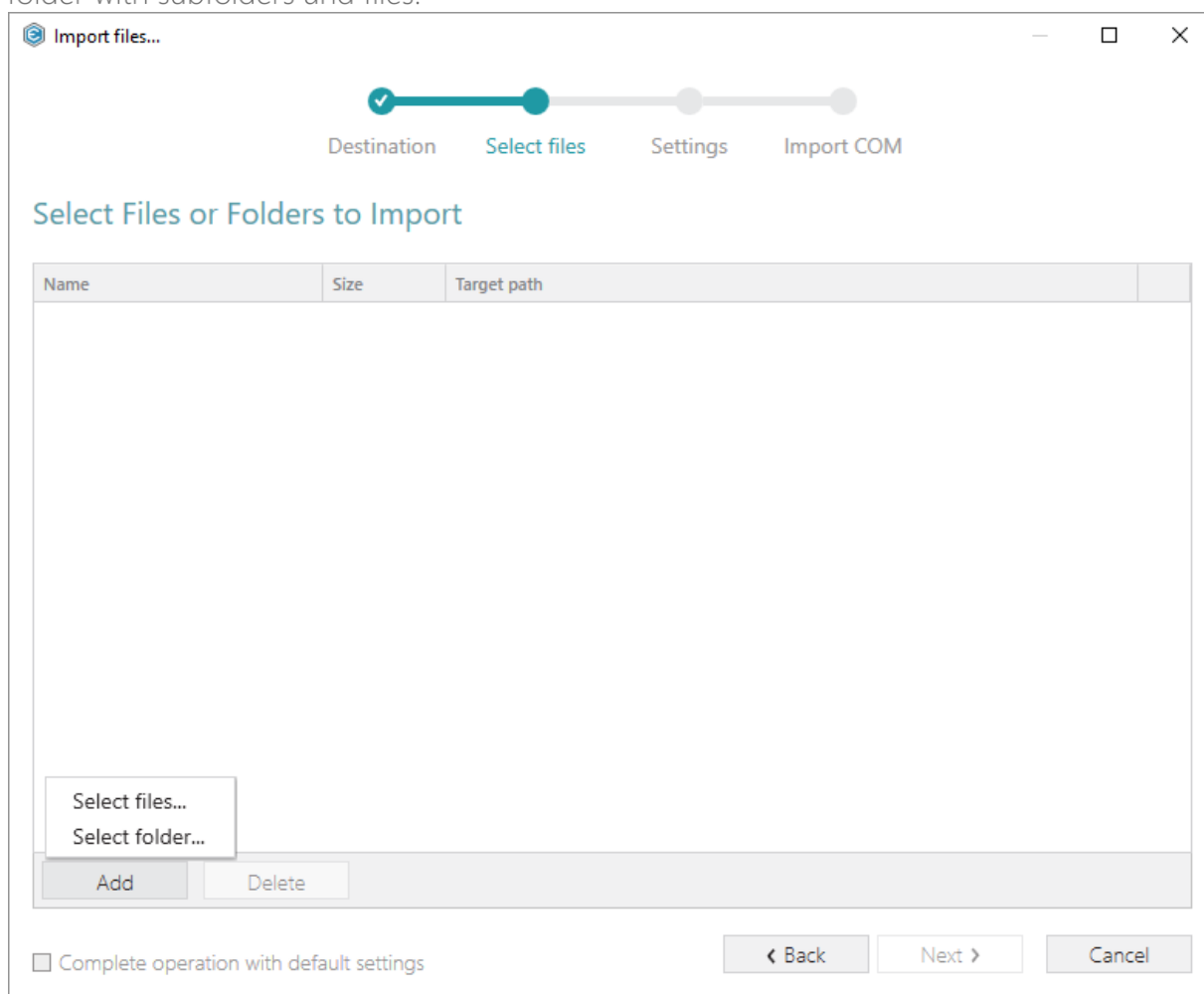
[7]. Enter a folder name and click Create.



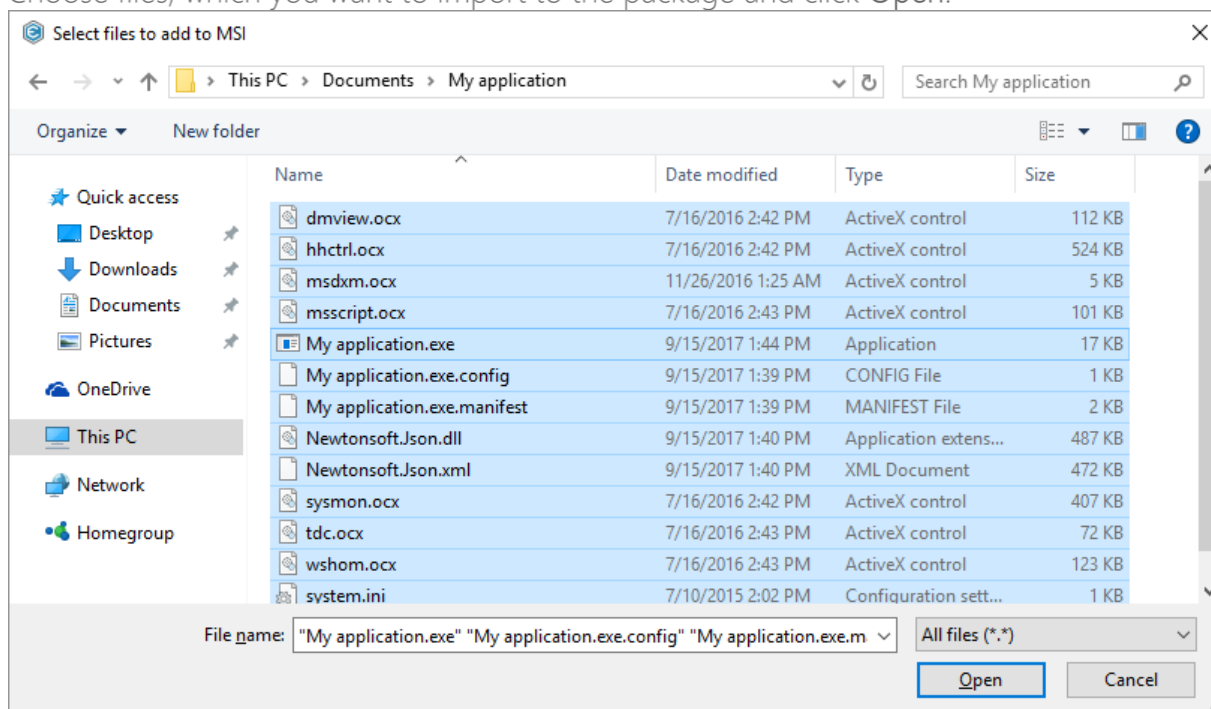
- [8]. For adding files to your package, select **Import files...** from the context menu of a folder, to which you want to import files.



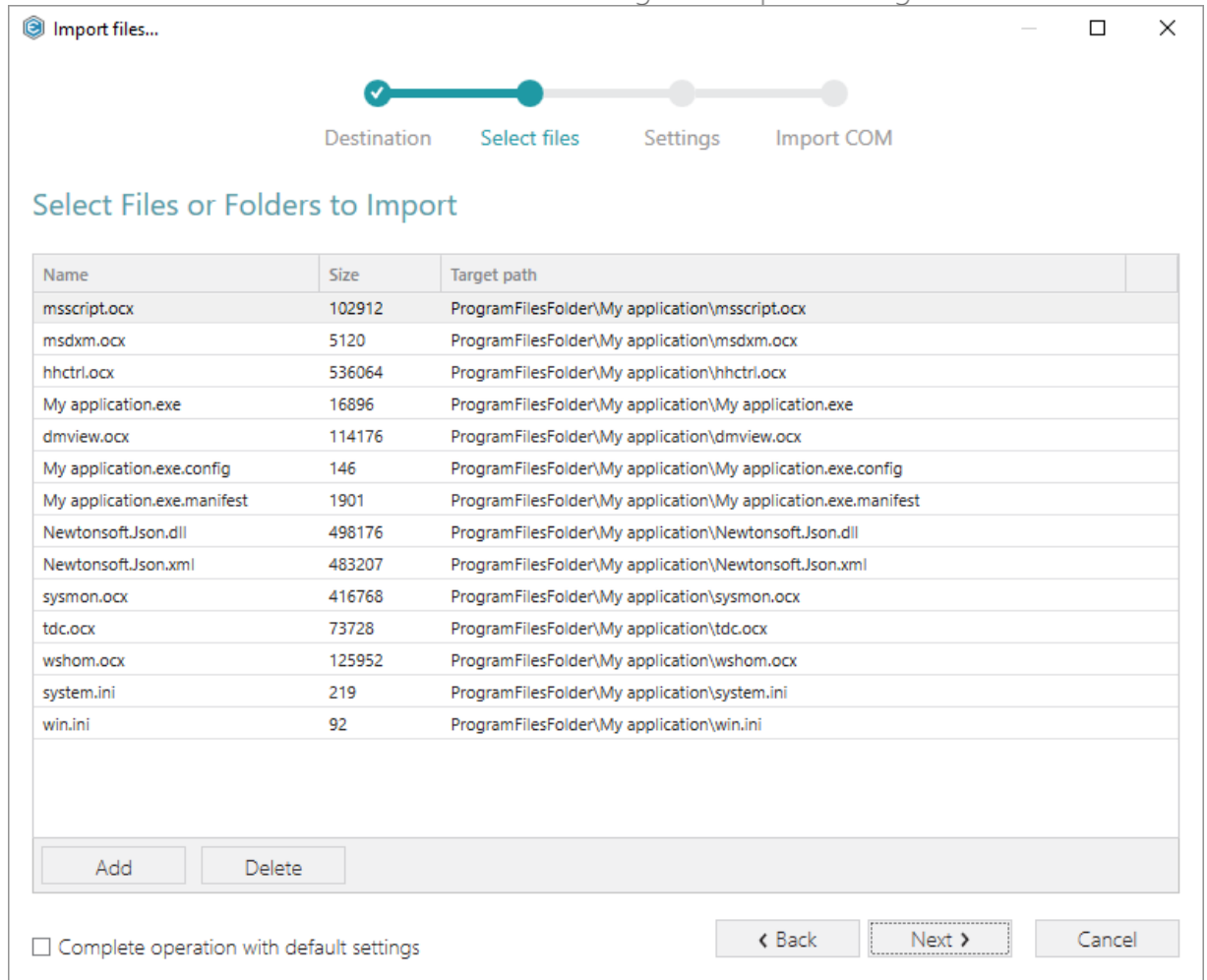
- [9]. Click Add -> Select files... to choose files in a folder or Add -> Add folder... to choose folder with subfolders and files.



- [10]. Choose files, which you want to import to the package and click Open.



[11]. Review the selected files and click **Next** to manage the import settings.



[12]. At this step, you can manage how to save INI files, select an MSI Feature, to which component with files will be assigned and select Compression type for your files. Below, in the tables, you will find the detailed description of these settings. Click **Next** to continue.

Import files...

DestinationSelect filesSettingsImport COM

Settings

Select how to handle INI files

INI files

Install standard INI files via IniFile table; non-standard via File table (recommended)

[Show non-standard INI-files](#)

Select a feature to assign new components to

Feature

<New Feature>

New feature...

☒ Create new feature

Select a compression type for new files

Media type

New CAB file

☐ Complete operation with default settings

Back

Next

Cancel

INI files settings

Install standard INI files via IniFile table; non-standard via Files table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data will be saved to the 'File' table as binary files.

Install all INI files via File table

All INI files will be saved only to the 'File' table as binary files.

Install all INI files via File table and duplicate to IniFile table

All INI files will be saved to both the 'File' and the 'IniFile' tables. This option is used to install INI files with unsupported data keeping their original file structure and update the necessary INI file values.

Feature settings

Create new feature

Either the "PACE_Complete" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-machine locations, or the "PACE_UserPart" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-user locations. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart"



one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

<a feature, selected from the list>	Components with files will be assigned to a feature, selected from the list.
-------------------------------------	--

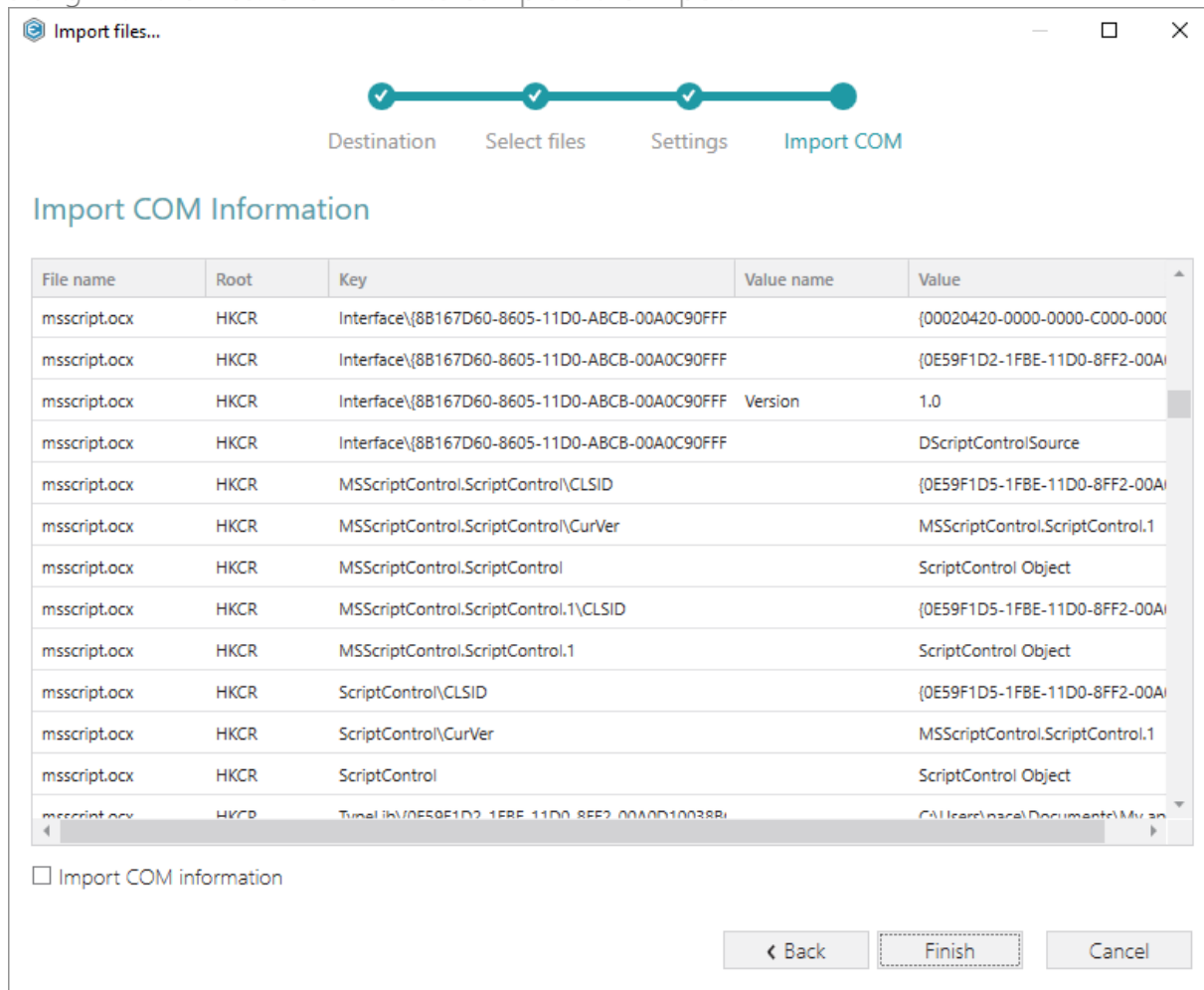
Media type settings

New Cab file	The imported files will be compressed to a new external cabinet (CAB) file. The external cabinet files are always placed next to the MSI package.
Uncompressed	The imported files will be copied to the MSI folder without compression. Note that copied files will be placed to the folder structure accordance to their target paths.
Existing	The imported files will be compressed to the existing external cabinet (CAB) file, which was created during the previous file import. Note that this option is visible only if during the current editing session you have already imported files with 'New Cab file' option.

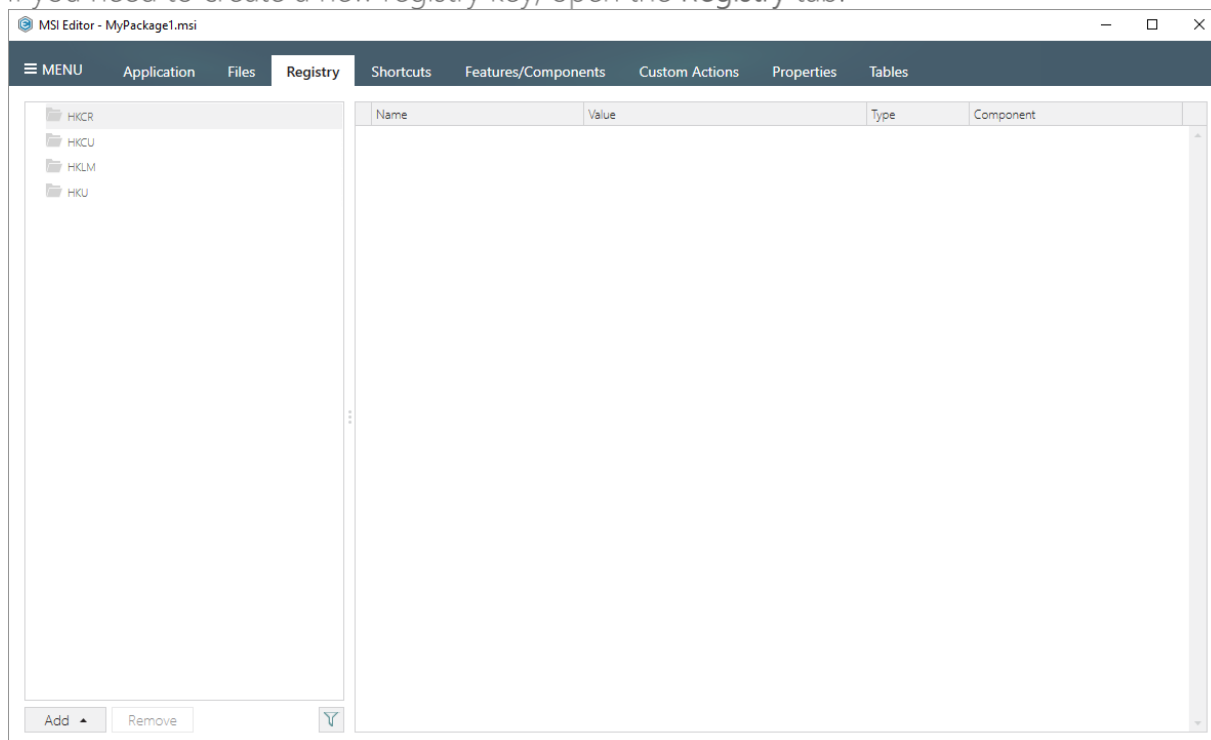
[13]. Review the COM information, extracted from the selected files, and select the **Import COM information** option to import this registration information into the 'Registry' table.



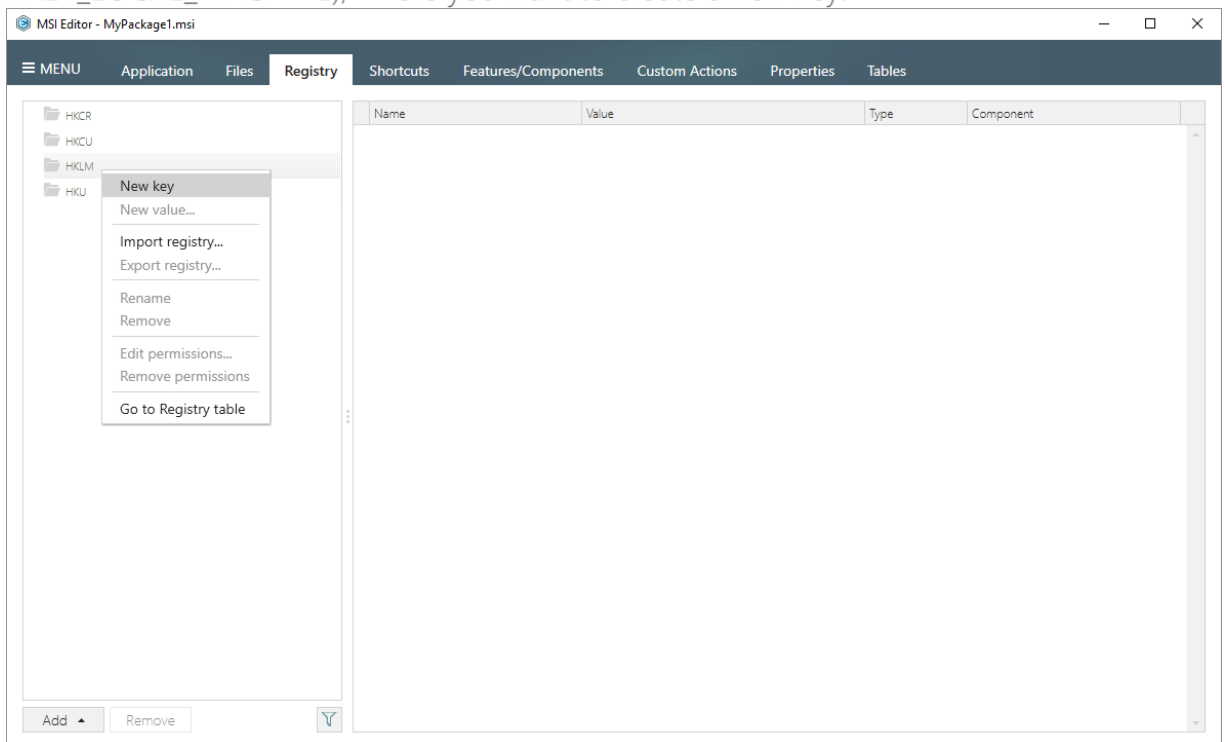
along with the files. Click **Finish** to complete the import.



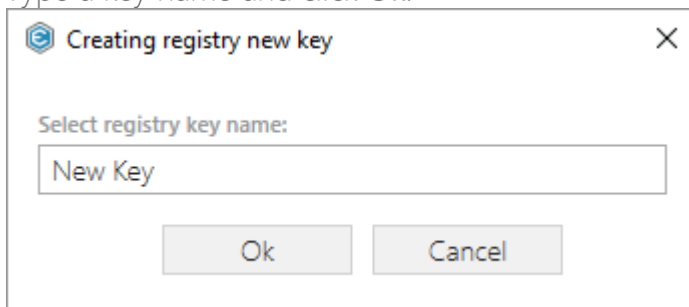
[14]. If you need to create a new registry key, open the Registry tab.



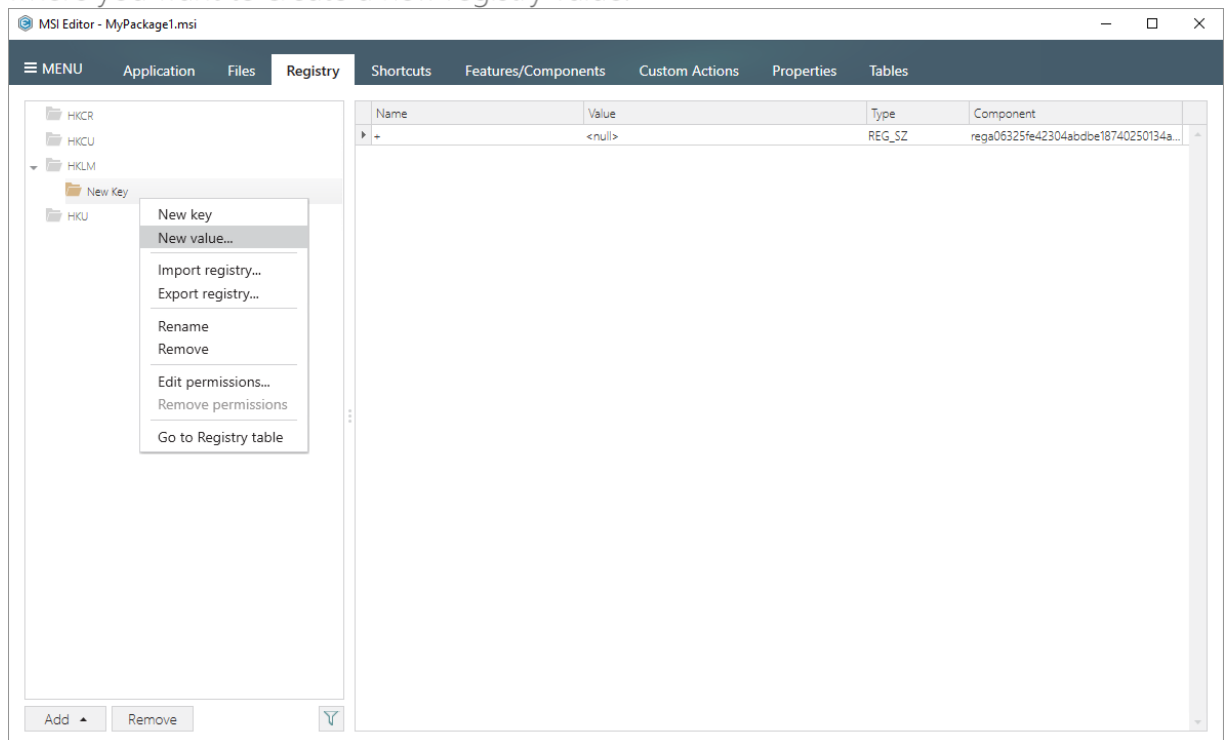
- [15]. Select **New key** from the context menu of a root hive (e.g. HKLM - HKEY_LOCAL_MACHINE), where you want to create a new key.



- [16]. Type a key name and click **Ok**.



- [17]. In order to create a new registry value, select **New value...** from the context menu of a key, where you want to create a new registry value.



- [18]. Enter a name and a value, select type from the list and component, to which the newly created registry value will be assigned, and then click **Add**.

Add value

Name: Test value

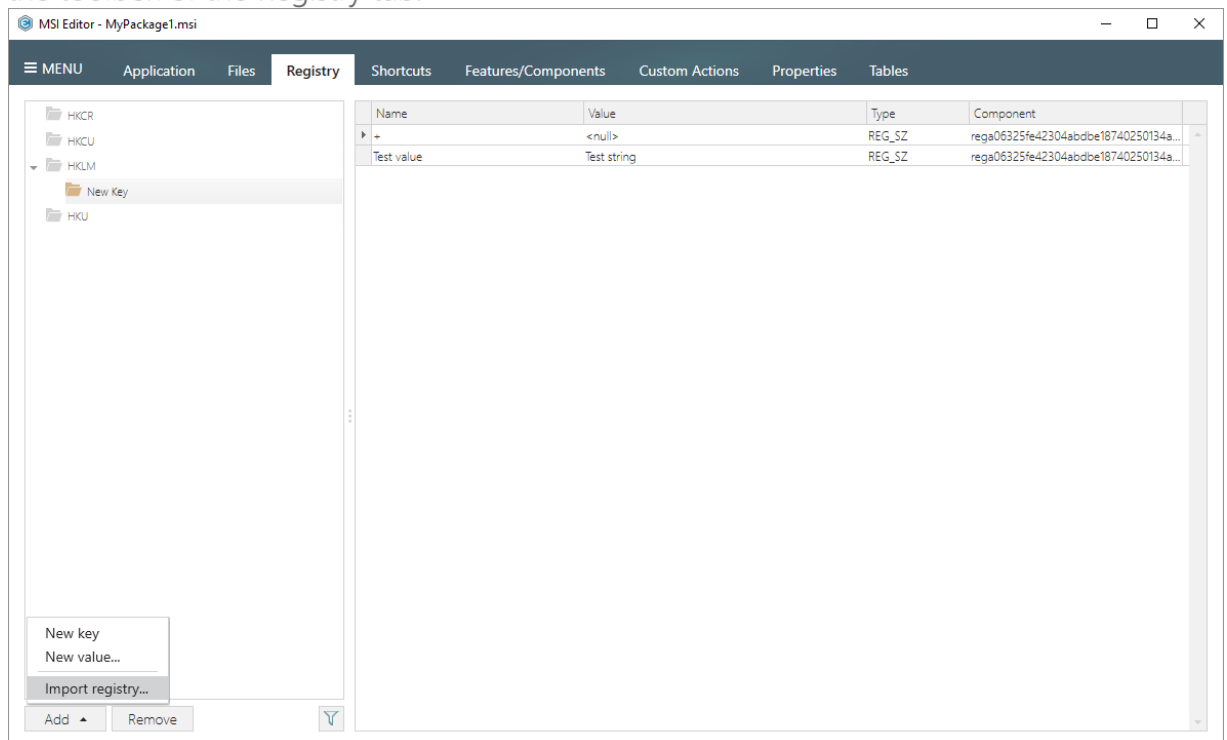
Type: REG_SZ

Value: Test string

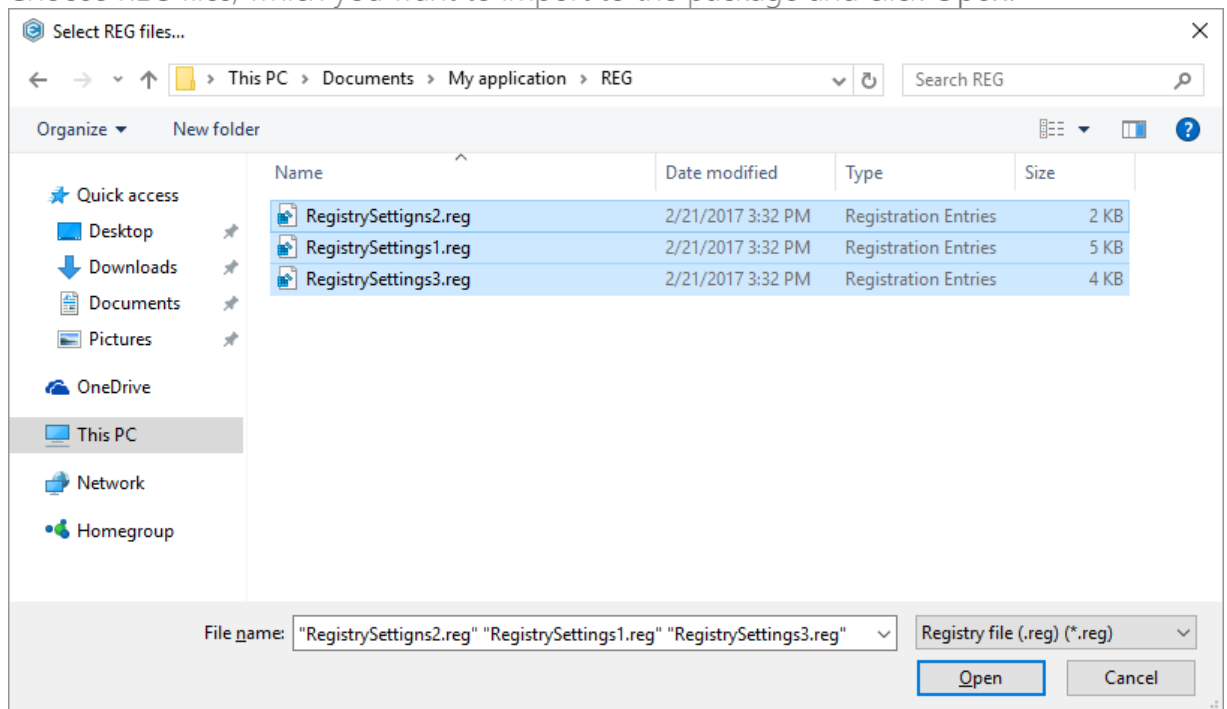
Component: rega06325fe42304abdbe18740250134a8d

Add Cancel

- [19]. In order to import registry entries from the REG file, select **Add -> Import registry...** from the toolbox of the Registry tab.



- [20]. Choose REG files, which you want to import to the package and click **Open**.



[21]. Review the registry entries, read from the selected REG files, and click **Next** to manage the import settings.

Registry

Settings

Registry entries to import

Key	Value name	Value	Action
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\Alt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\RAIt	-		Remove
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	Description	Use Right Alt to activate m	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	Sequence	F9	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	DisableOutput	#1	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	RunAfterFARStart	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	EmptyCommandLine	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\Shell\RAIt	NotEmptyCommandLine	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	Description	Use Alt to deactivate menu	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	Sequence	Esc	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	DisableOutput	#1	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	RunAfterFARStart	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	EmptyCommandLine	#0	Add
HKEY_CURRENT_USER\Software\Far2\KeyMacros\MainMenu\Alt	NotEmptyCommandLine	#0	Add

Add

Remove

Rows: 47

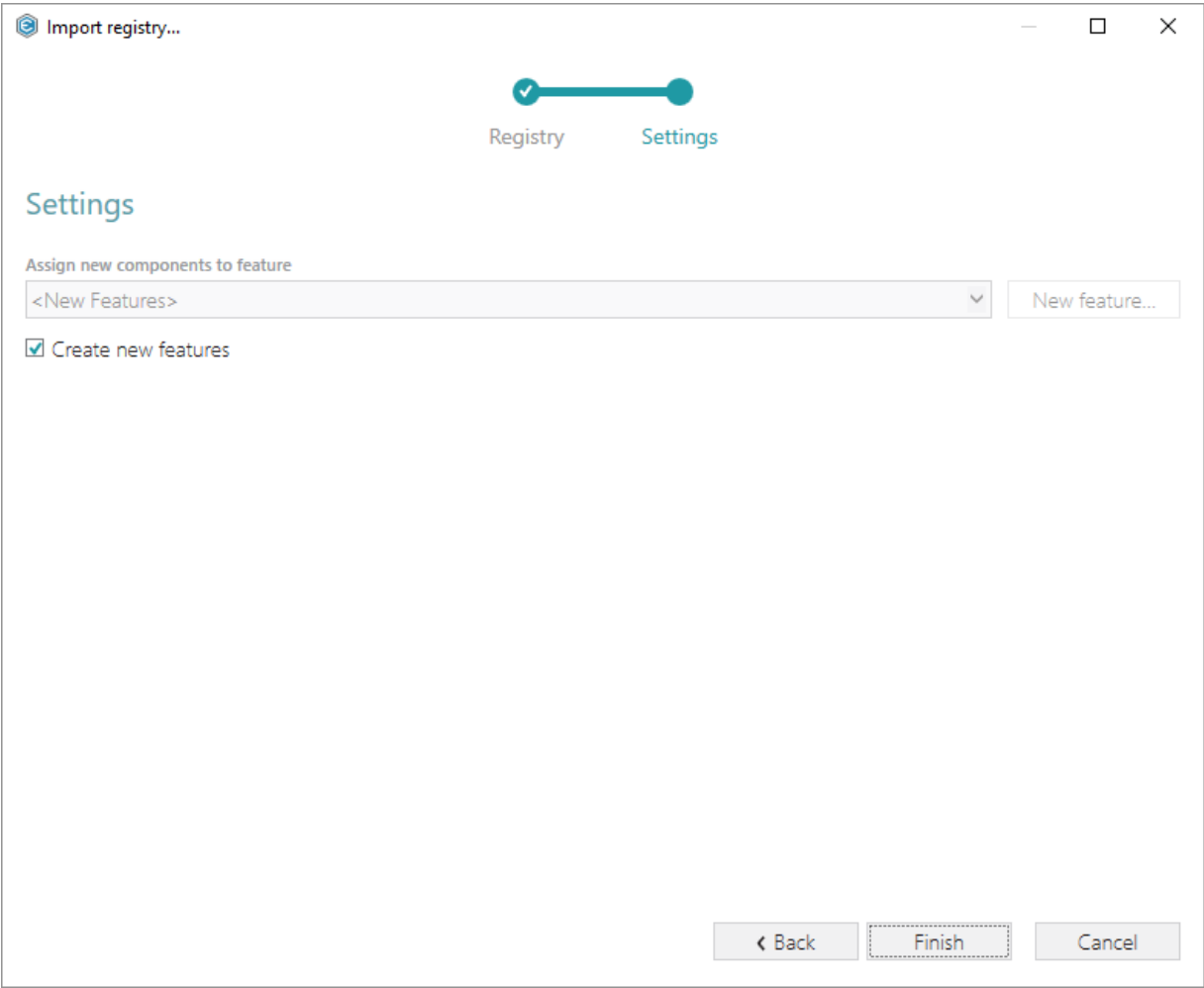
☐ Complete operation with default settings

< Back

Next >

Cancel

[22]. At this step, you can select an MSI Feature, to which component with registry entries will be assigned. Below, in the tables, you will find the detailed description of these settings. Click **Finish** to complete the import.



Feature settings

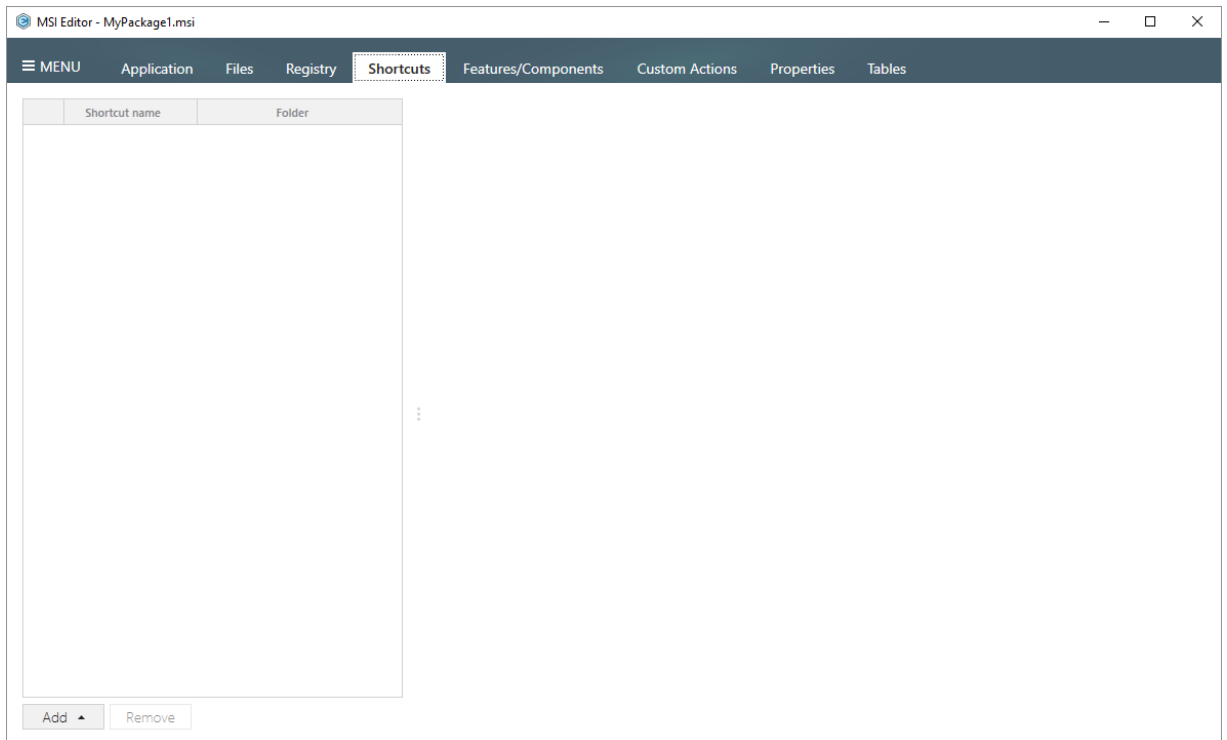
Create new features

The "PACE_Complete" feature will be created (or used if exists) for keeping components with the per-machine registry entries, and the "PACE_UserPart" feature will be created (or used if exists) for keeping components with the per-user registry entries. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart" one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

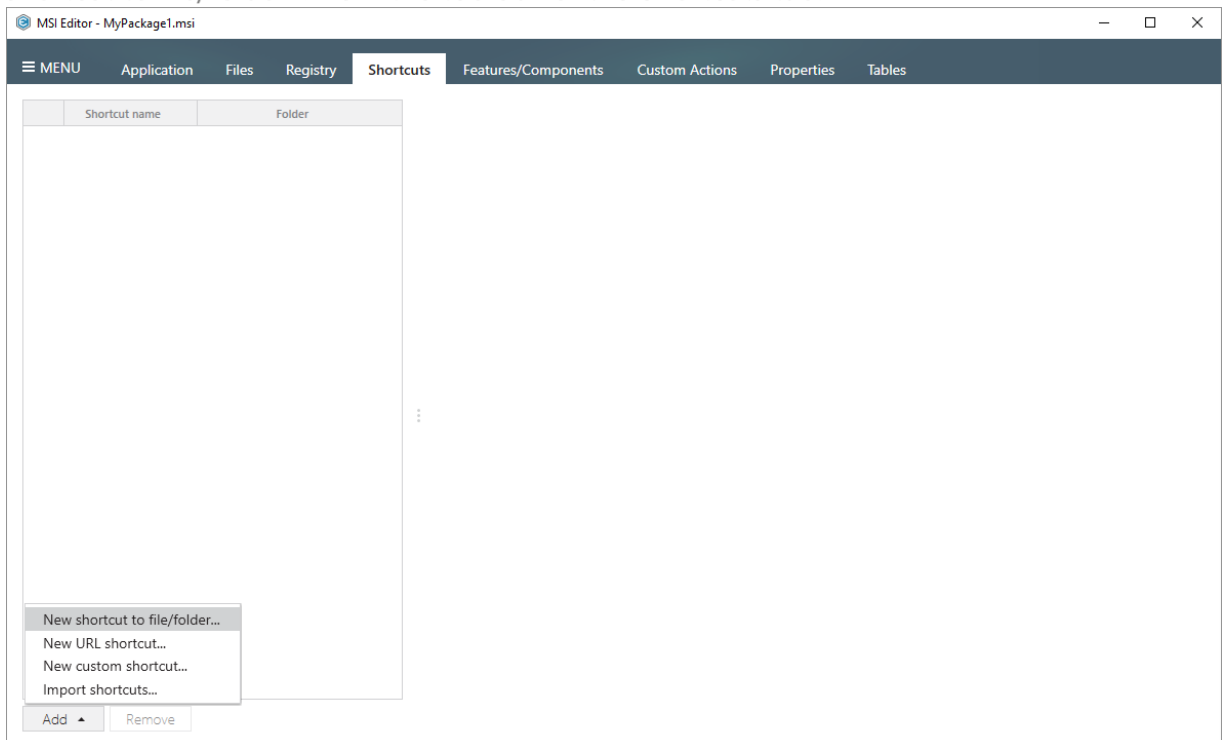
<a feature, selected from the list>

Components with the imported registry entries will be assigned to a feature, selected from the list.

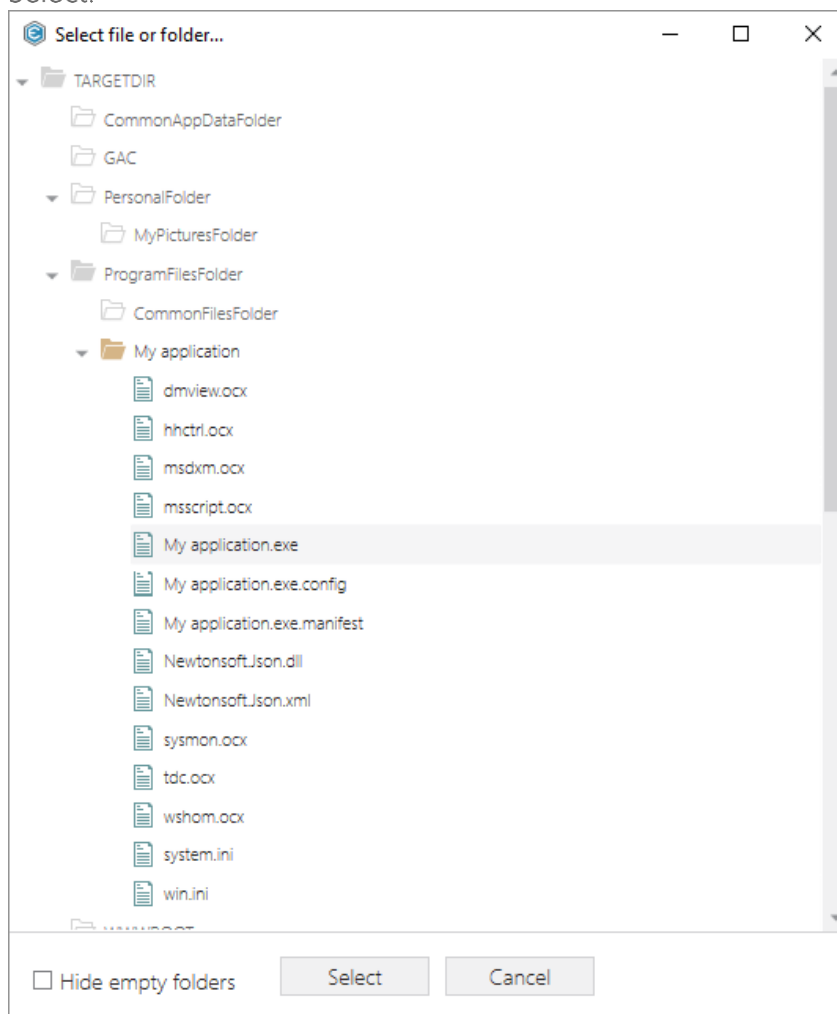
[23]. If you need to create a new or import existing shortcuts to the package, go to the Shortcuts tab.



[24]. For creating a new shortcut that points to a file inside the package, select Add -> New shortcut to file/folder... from the toolbox of the Shortcuts tab.

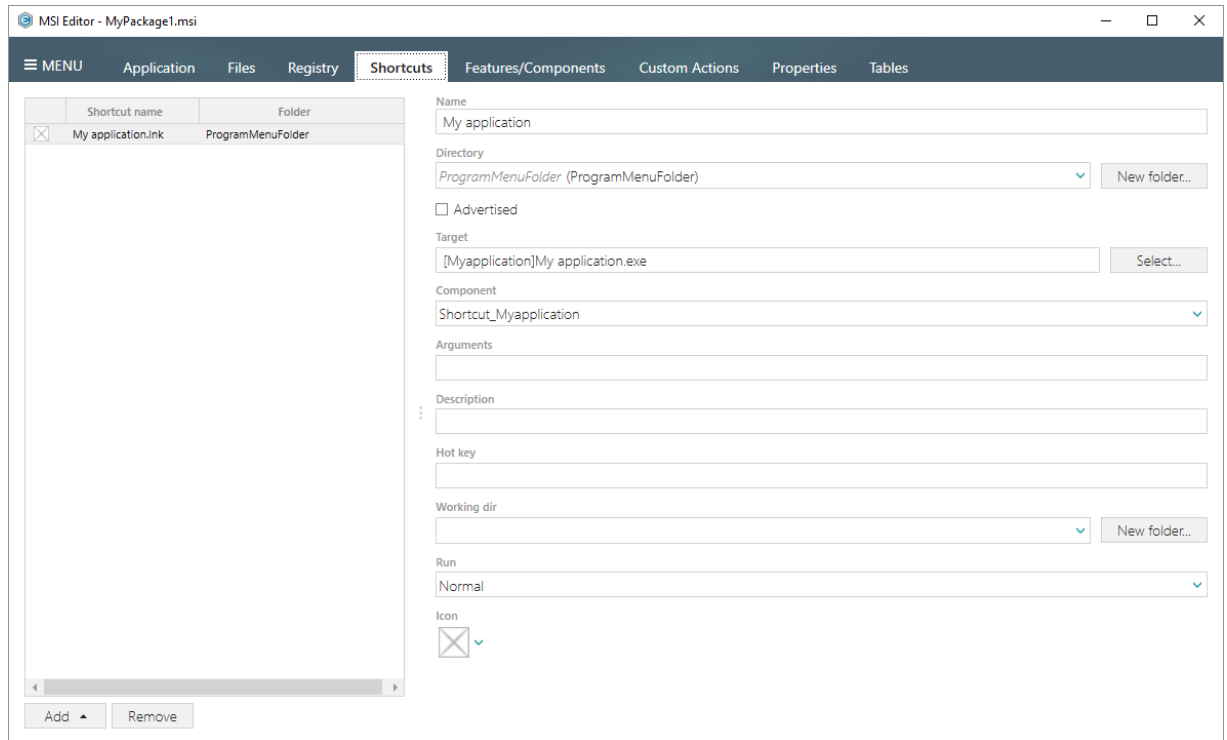


- [25]. Select a file (e.g. My application.exe), which will be launched by this shortcut, and click Select.

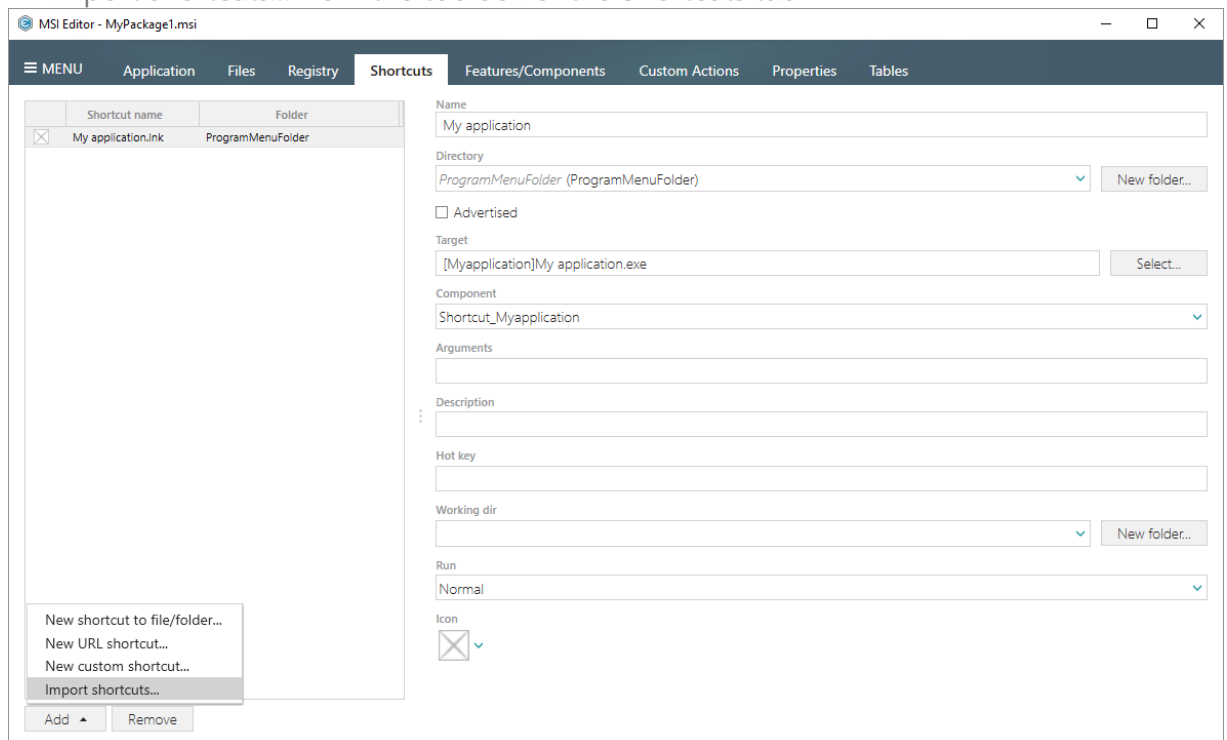


- [26]. Using the details pane, you can update the shortcut name, destination location, target, icon and so on. Select the **Advertised** option to convert the created regular shortcut to the

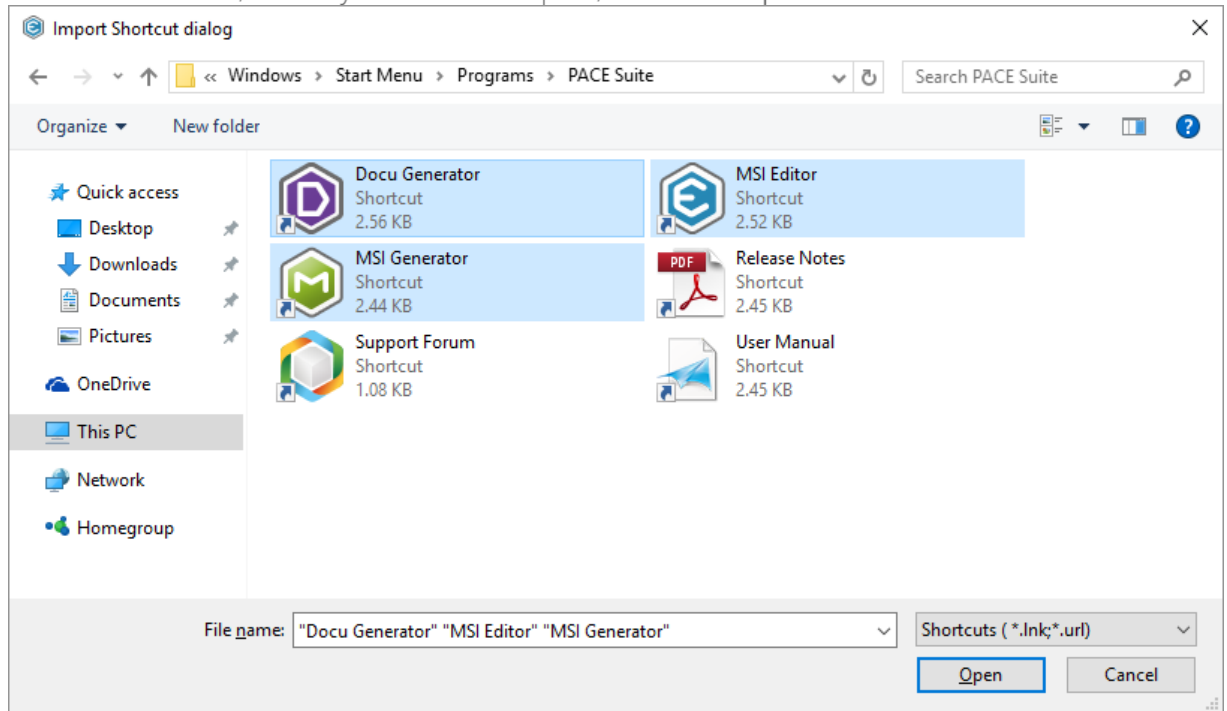
advertised one.



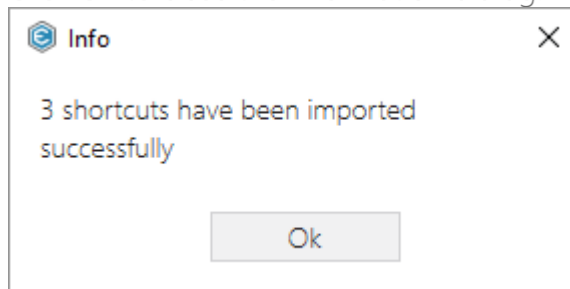
[27]. In order to import LNK and URL shortcuts to the package from the file system, select Add -> Import shortcuts... from the toolbox of the Shortcuts tab



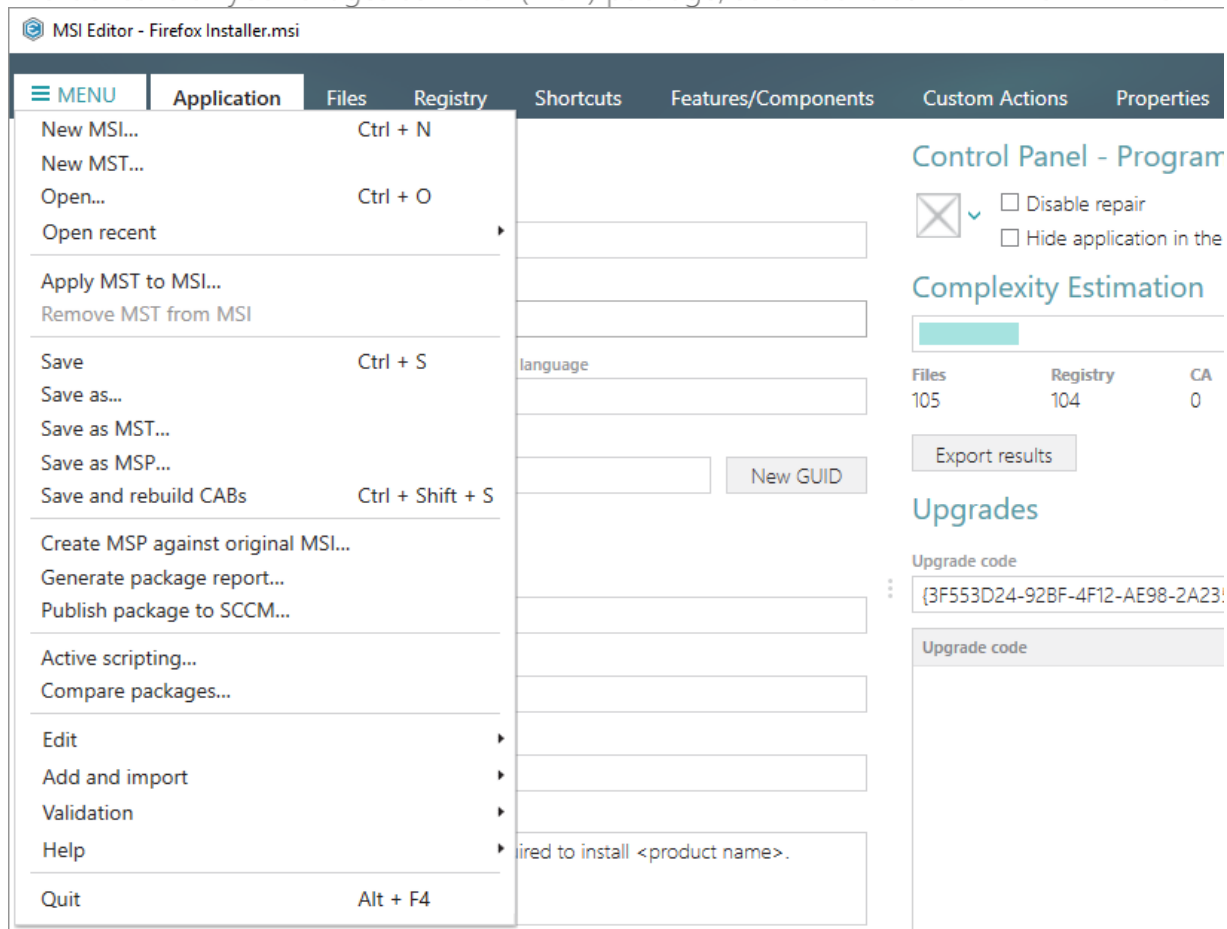
[28]. Choose shortcuts, which you want to import, and click Open.



[29]. Click Ok to close the information dialog.



[30]. In order save all your chages as Patch (MSP) package, select Save as MSP... from MENU.



[31]. Increase a Product version for the minor and major update and leave default for the small update. Generate new Product code only for the major update and leave default for the minor and small update. If needed, update a Target product name in order to change the

Product Name of the updated application. Click **Next** to select patch properties.

Create a Patch Package

Type of update

Patch properties

Creating patch

Type of update

Increase version for minor and major update and leave default value for small update

Product version

Generate new code only for major update and leave default value for minor and small update

Product code

Target product name

[Review the instructions to create a patch package successfully...](#)

[32]. Update Display name and Description of the Patch package and select the necessary properties. Click Create to create the Patch (MSP) package.

Create a Patch Package

Progress bar: Type of update (✓), **Patch properties**, Creating patch

Patch properties

Display name
Mozilla Firefox 51.0.1 (x86 en-US) 51.0.1 Patch

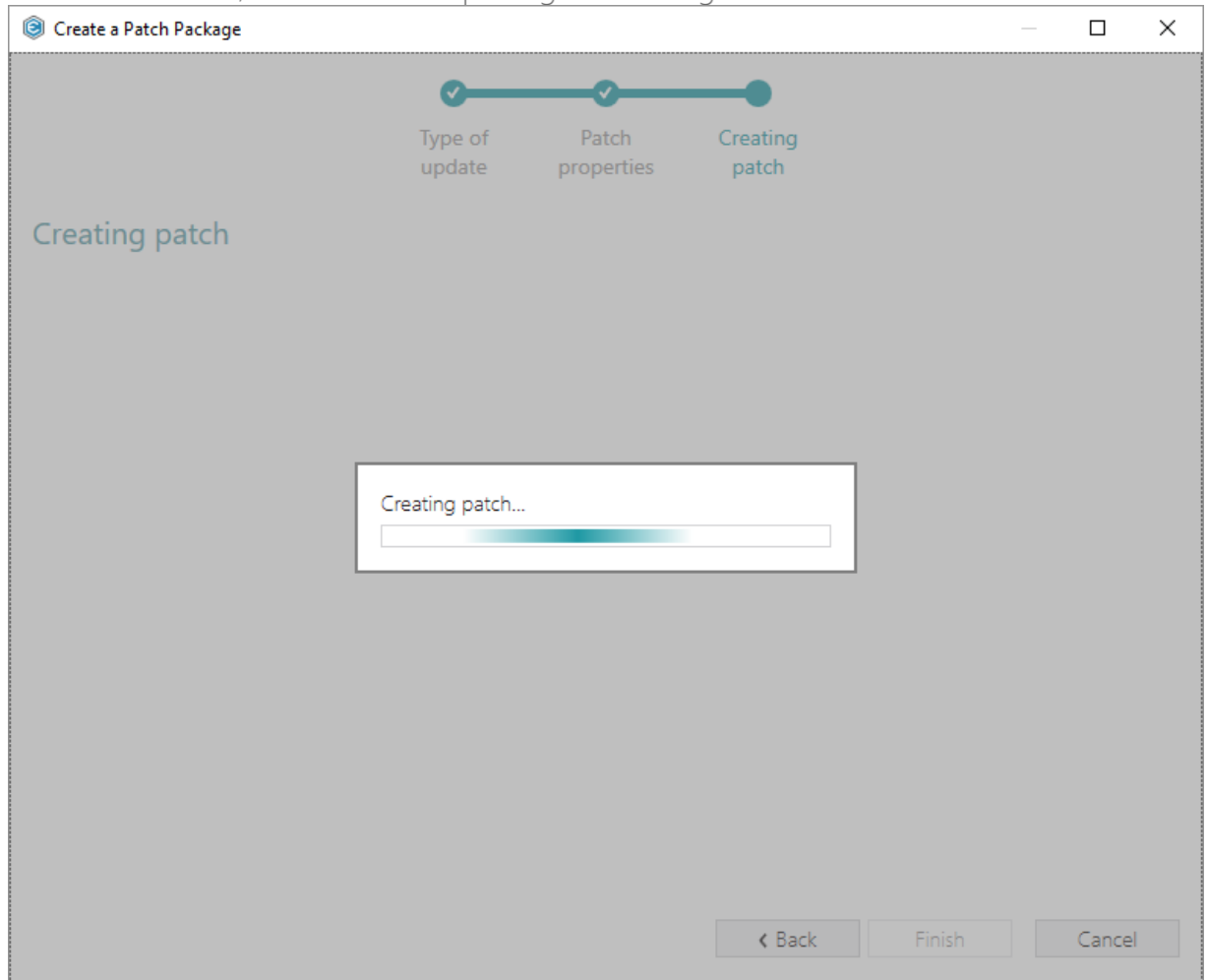
Description
Patch description

☒ Make this patch uninstalleable
The only method to remove a patch that is not uninstalleable is to uninstall the patched application and then reinstall the application without reapplying the patch.

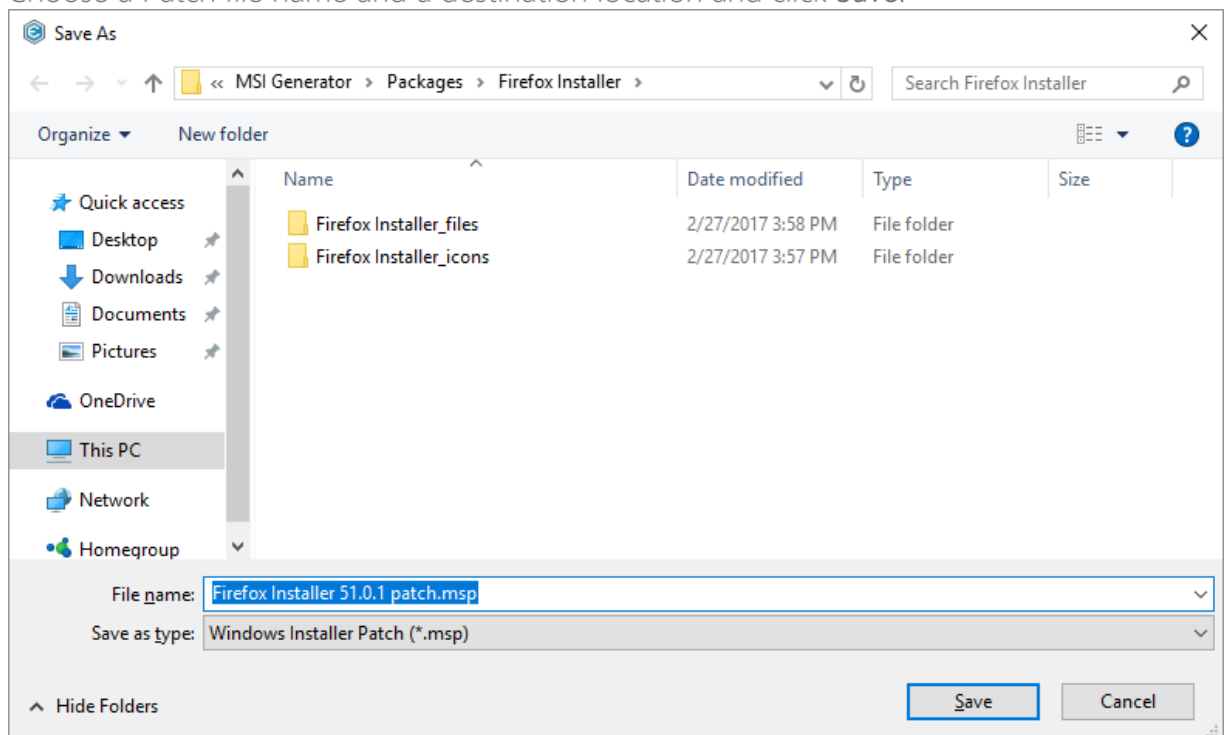
☐ Include whole files only
Changed files are to be included in their entirety when creating the patch package instead of creating a binary file patch. The patch files will be bigger in size but the API runs faster.

Buttons: < Back, **Create >**, Cancel

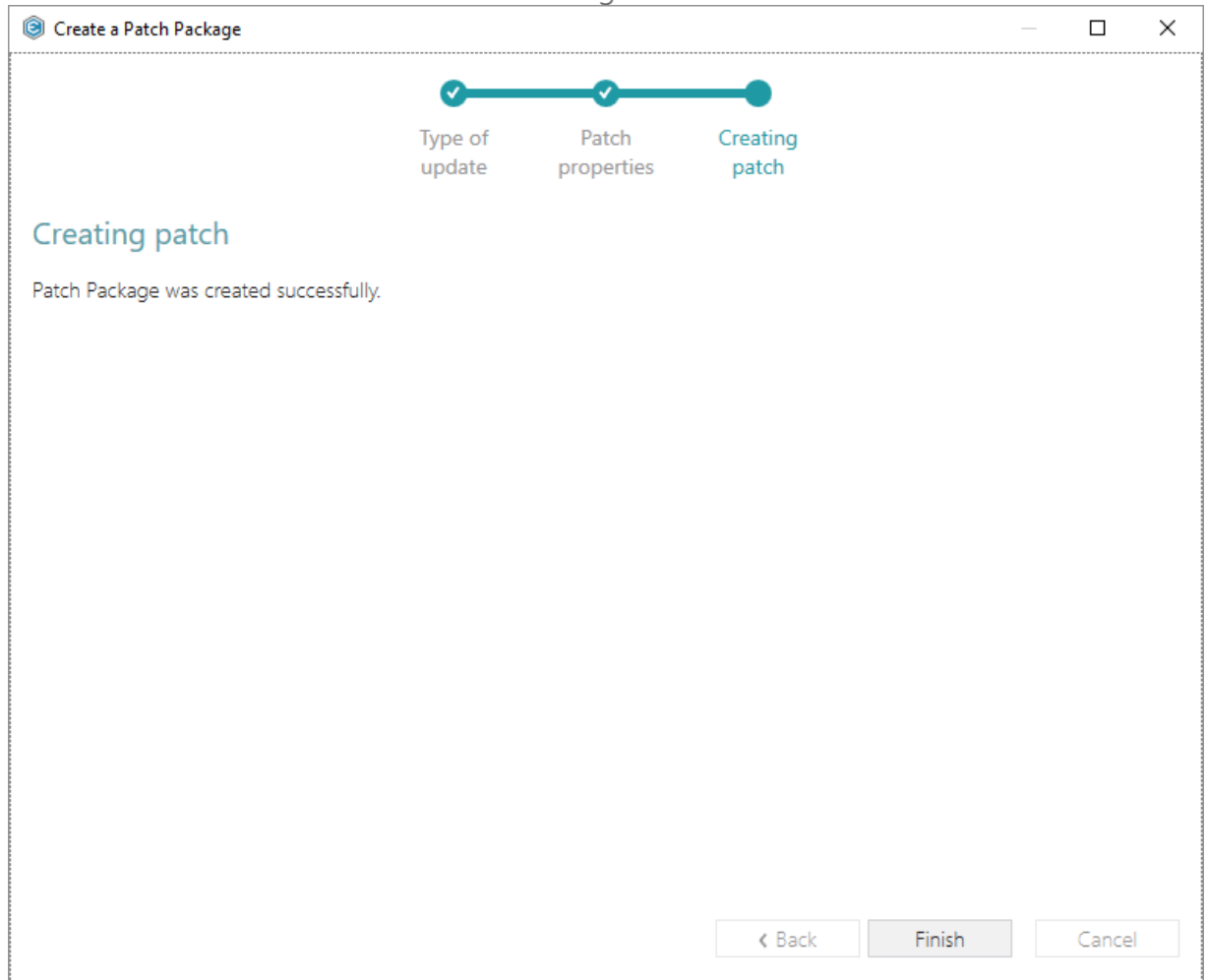
[33]. Please wait a little, while the Patch package is creating.



[34]. Choose a Patch file name and a destination location and click Save.



[35]. Click Finish to close the Create a Patch Package wizard.



3.4 New APPX

NOTE Building Universal Windows Platform app packages (APPX) is available under Windows 10 or Windows Server 2016 or newer.

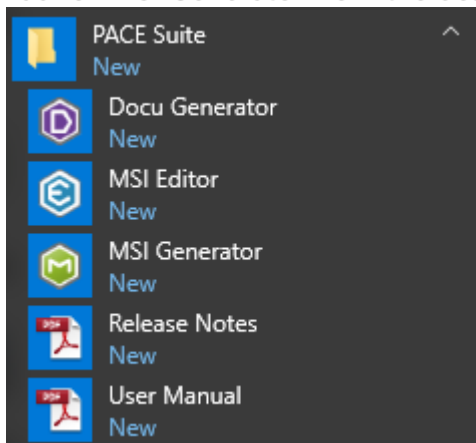
Choose a scenario that better suits your needs:

- **Create APPX from Scratch**, described in section 3.4.1
Create a new empty project in MSI Generator, add folders, files, registry entries and APPX apps (shortcuts) to this project and then generate the Universal Windows Platform app package (APPX) from this project.
- **Convert (Repackage) EXE, MSI to APPX**, described in section 3.4.2
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into Universal Windows Platform app package (APPX) using MSI Generator.

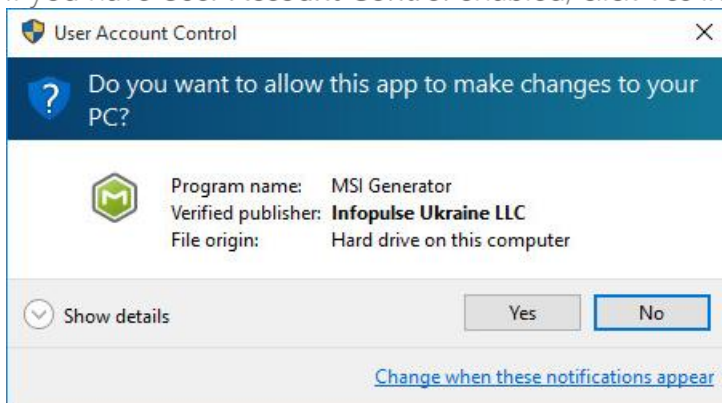
3.4.1 Create APPX from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries and APPX apps (shortcuts) to this project and then generate the Universal Windows Platform app package (APPX) from this project.

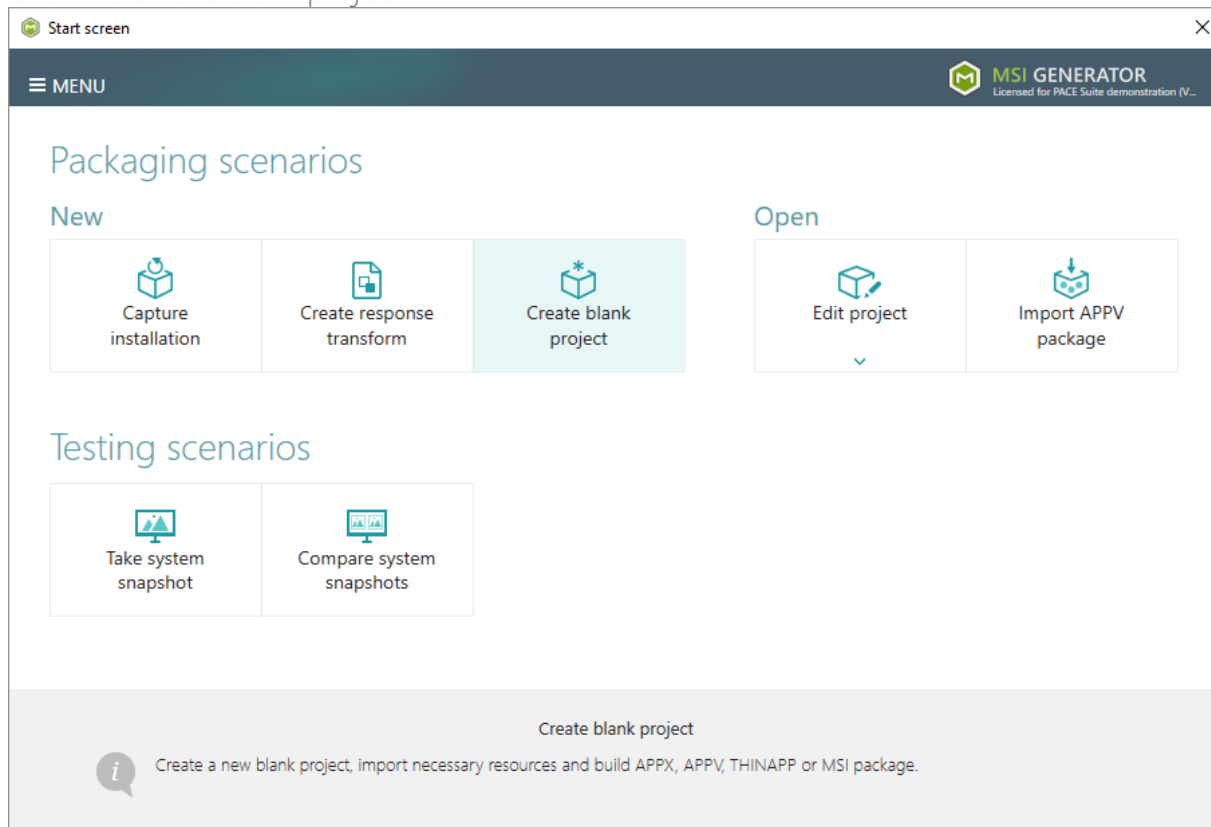
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



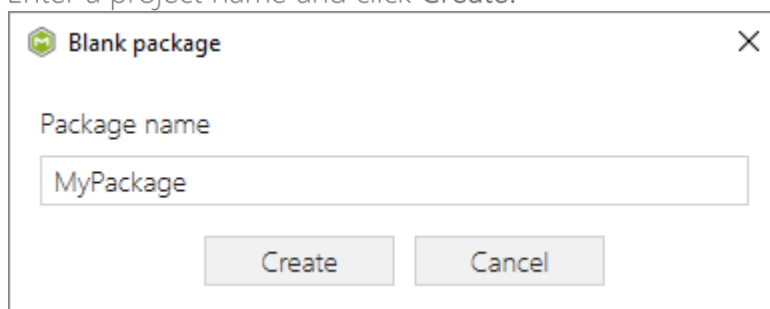
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click the Create blank project.

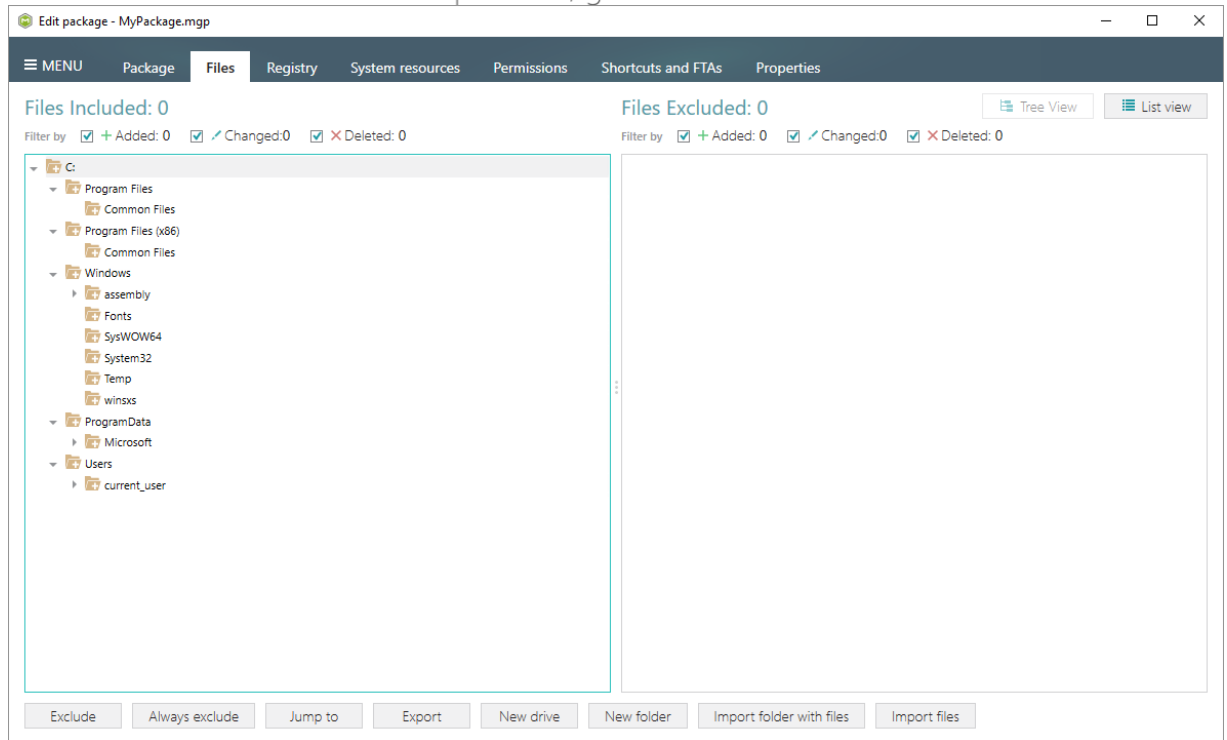


- [4]. Enter a project name and click Create.

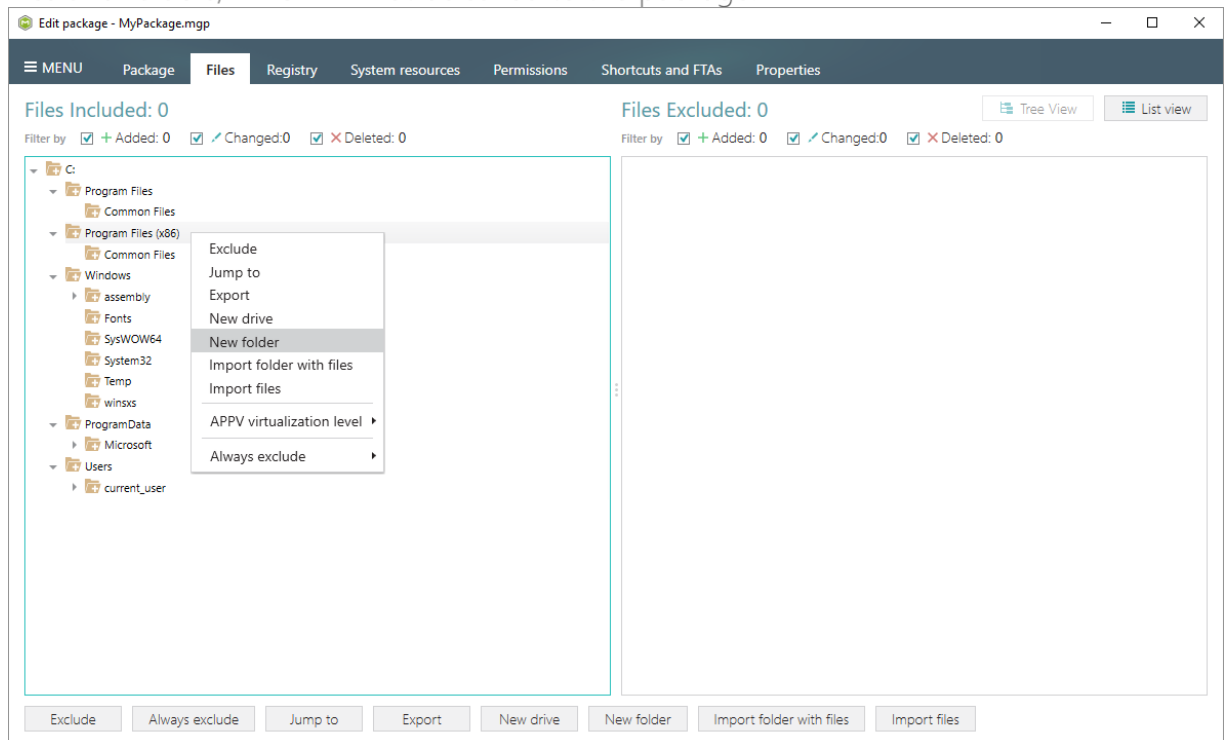


- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [10] describe how to create a new folder and import files to this folder; the steps from [11] to [13] describe how to import registry entries from the REG file; the steps from [14] to [16] describe how to add APPX app (shortcut) and its logos; and two last steps [17] and [19] describe how to build APPX package from the prepared project.

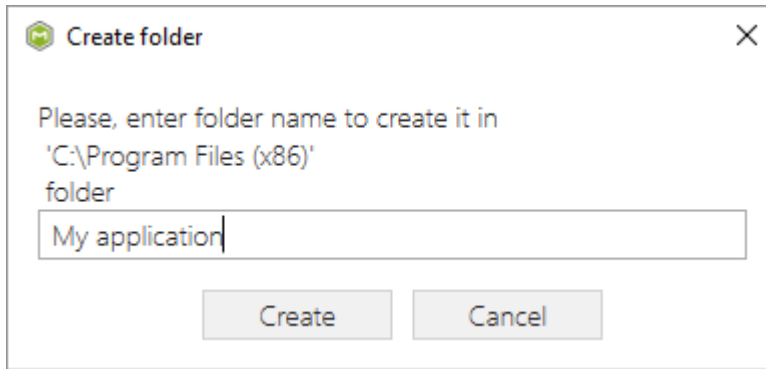
- [6]. In order to create a folder and import files, go to the Files tab.



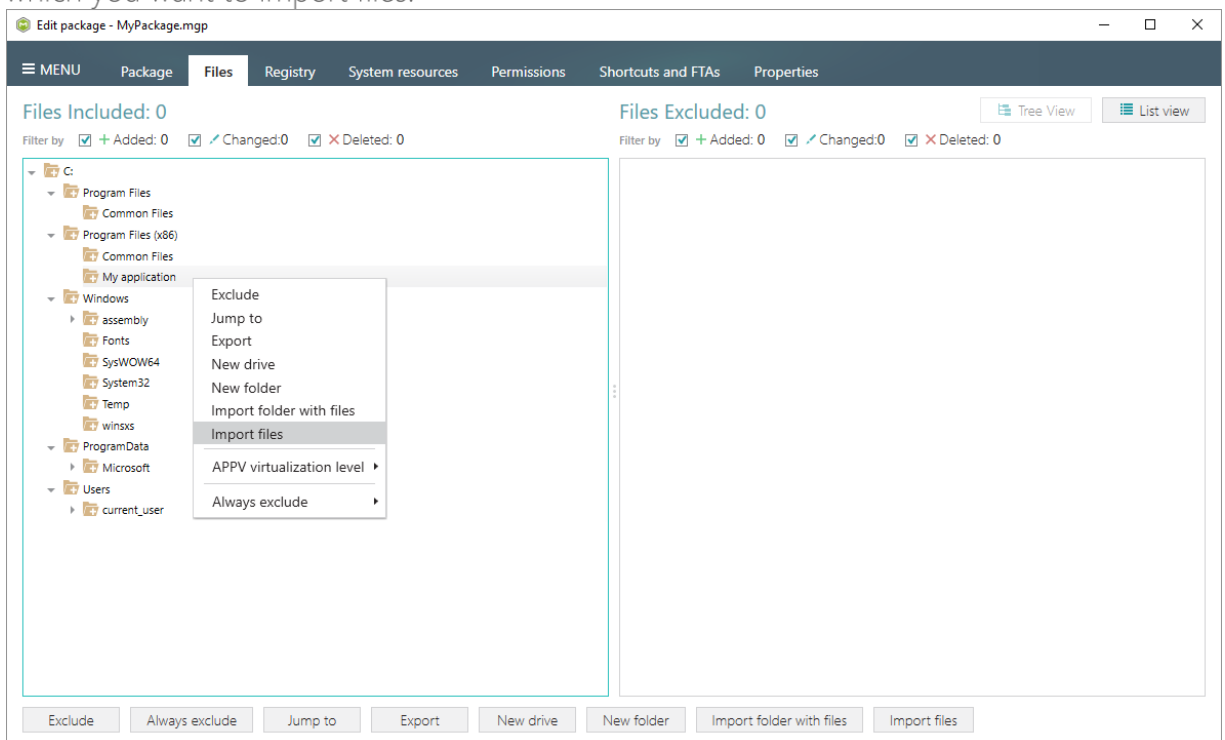
- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



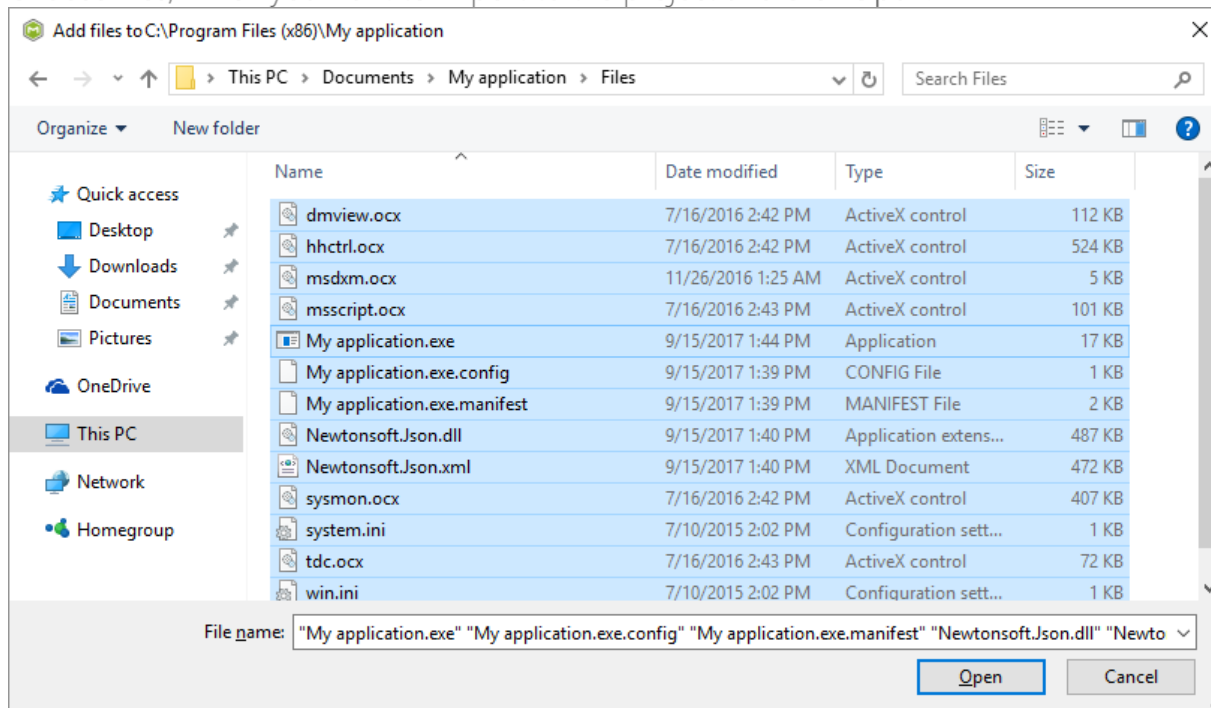
- [8]. Enter a folder name and click Create.



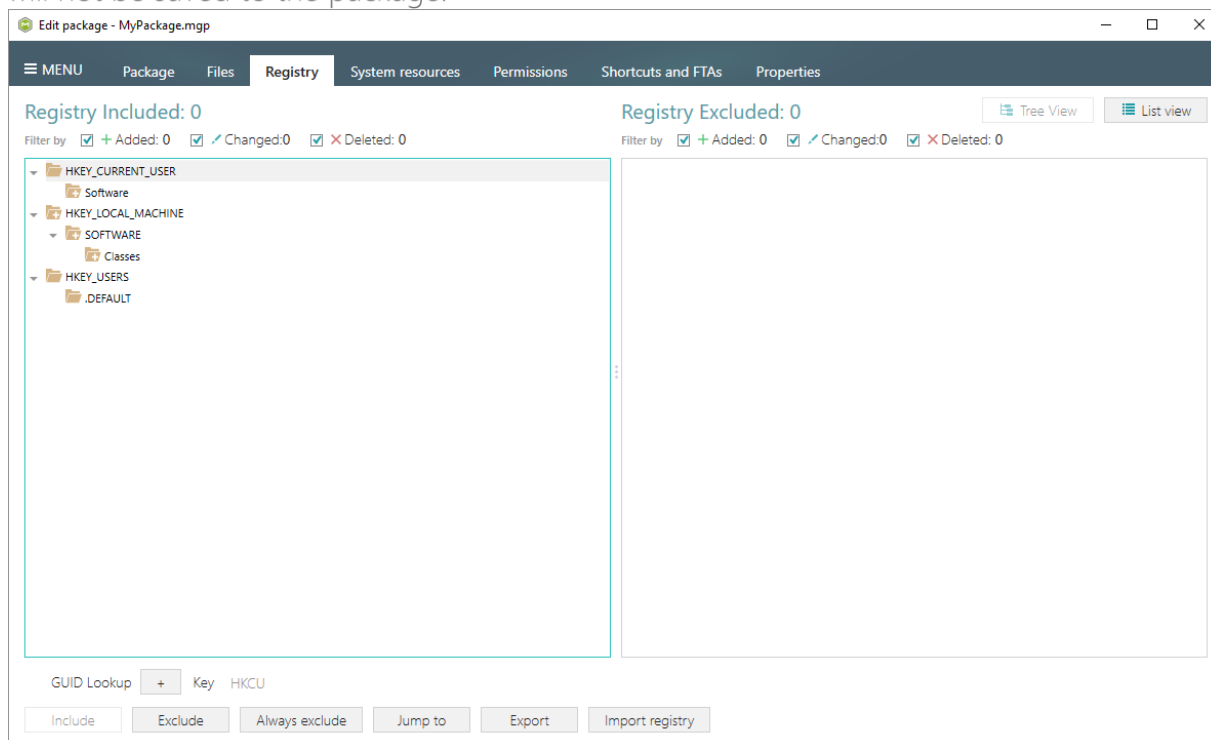
- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



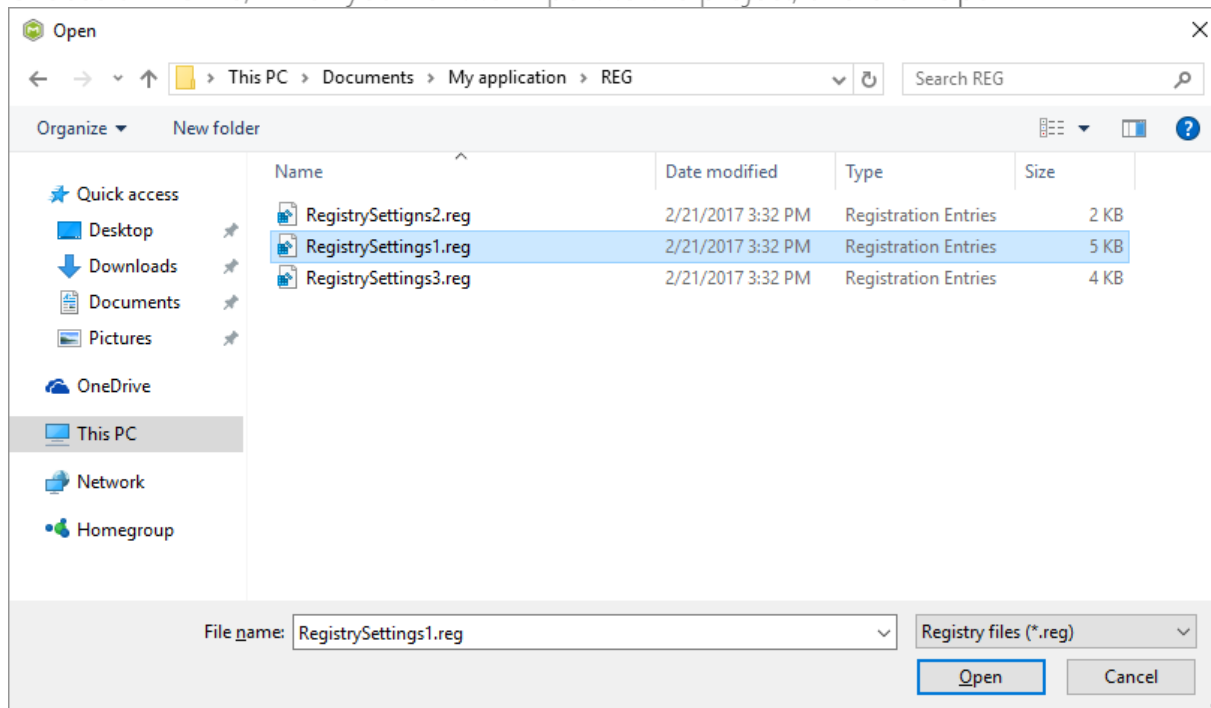
[10]. Choose files, which you want to import to the project and click **Open**.



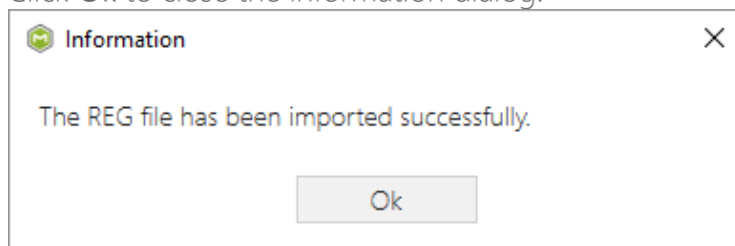
[11]. In order to import registry entries from the REG file, go to the **Registry** tab and click the **Import registry** button, located in the bottom part of the window. Note that the left 'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



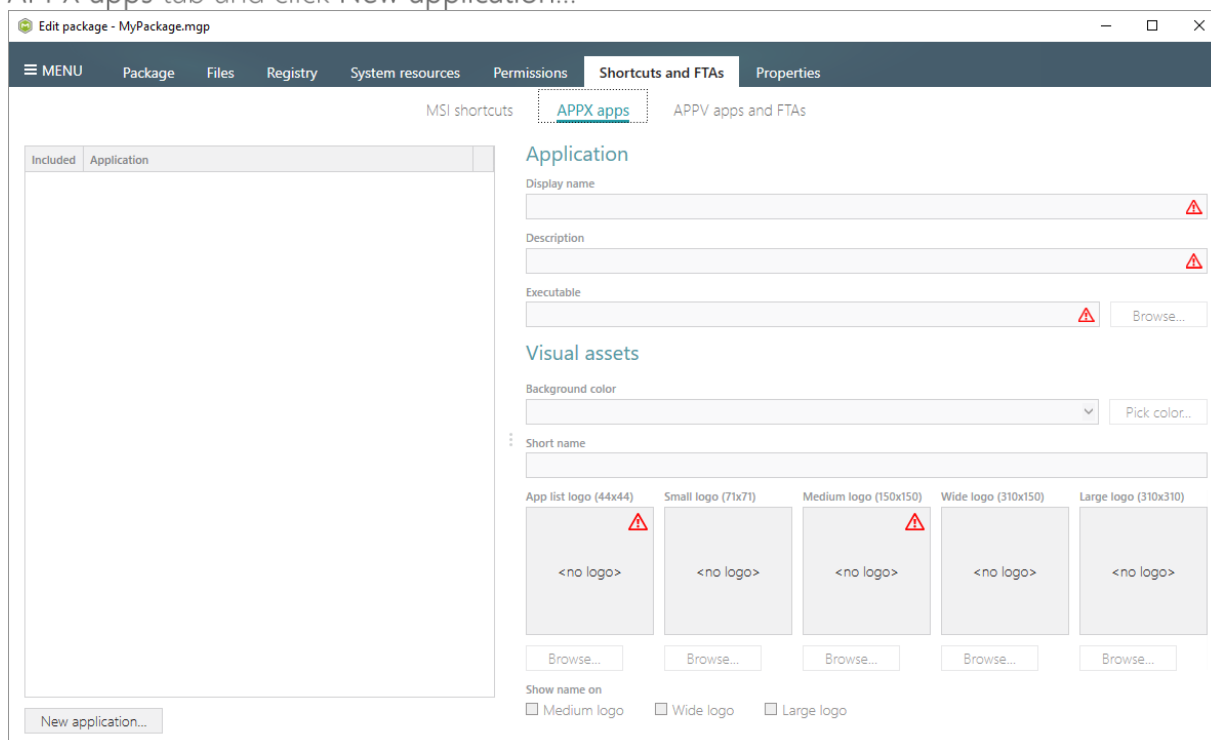
[12]. Choose a REG file, which you want to import to the project, and click Open.



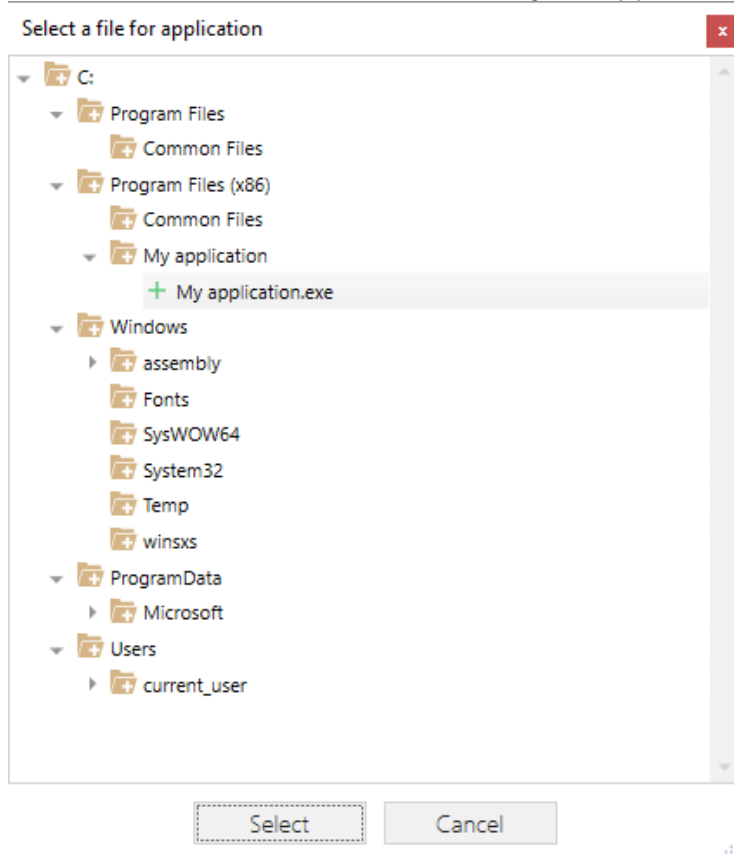
[13]. Click Ok to close the information dialog.



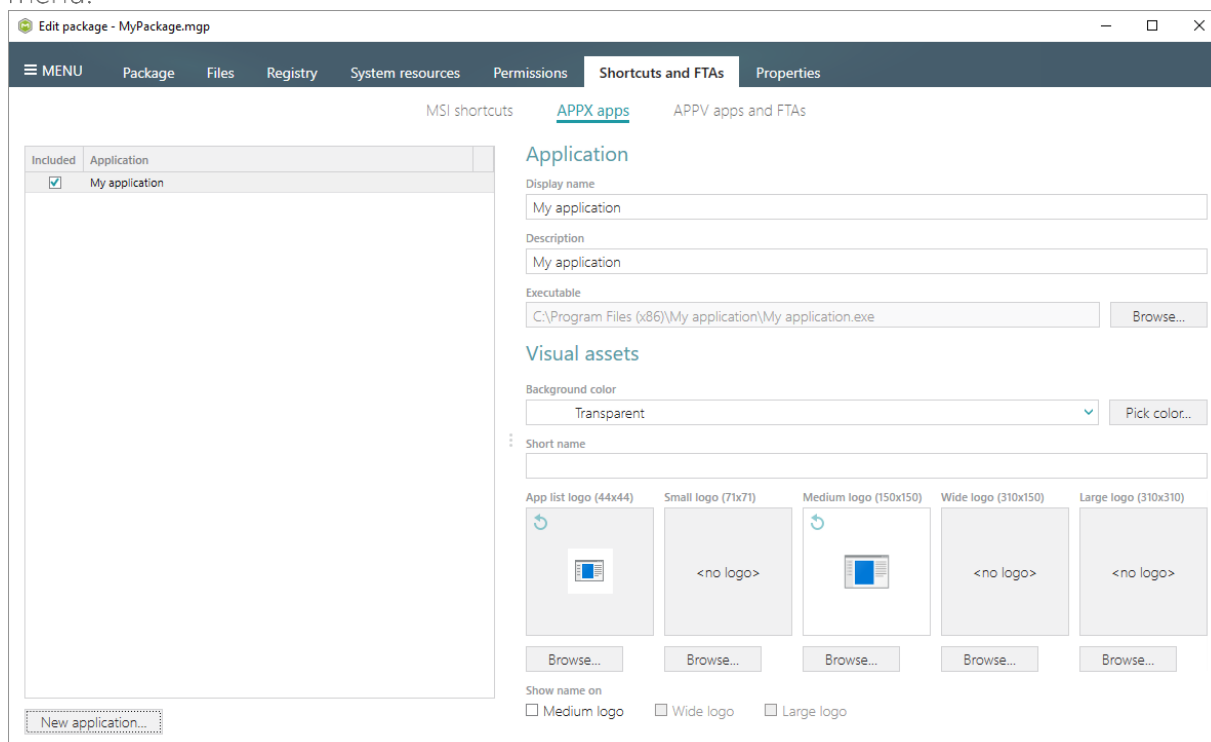
[14]. If you need to add an APPX app (shortcut) and its logos, go to the Shortcuts and FTAs -> APPX apps tab and click New application...



- [15]. Select the main executable file (EXE) of your application from the tree and click Select.



- [16]. Using the details pane, you can update the APPX app display name, description, and visual assets such as background color and logos, which will be displayed in the Start menu.



- [17]. In order to build APPX package from your project, navigate to the Package -> APPX tab, fill-in all the required fields, select the digital signing option and click Build APPX. Find

description of the APPX settings below in the table.

Application details

Display name	A friendly name of the package that can be displayed to users.
Publisher display name	A friendly name for the publisher of the package that can be displayed to users.
Description	A friendly description that can be displayed to users.
Application root folder	A location of the main application folder. Content of the selected folder will be placed to the package root, instead of VFS.
Logo (50x50)	A logo image of the package that can be displayed to users.

Signature

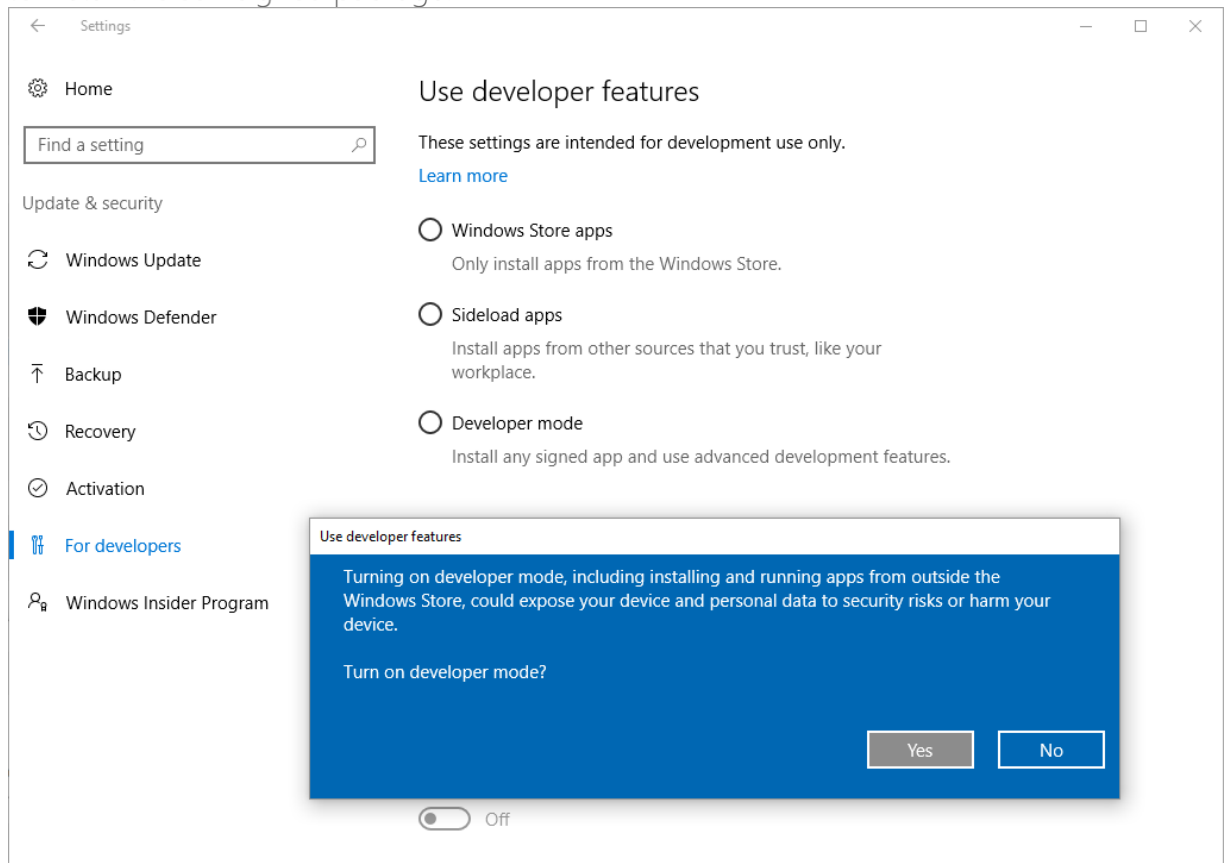
Do not sign the package	Use this option if you are planning to submit the package to Windows Store or sign it manually.
Sign the package with my certificate	Use this option to sign the generated package with the valid certificate that you already have.
Sign the package with auto-generated self-signed certificate	Use this option to generate the self-signed certificate and sign the package with this certificate. NOTE In order to deploy your package, install the generated certificate before (double-click the auto-generated.pfx file, and in the Certificate Import Wizard, install the certificate onto the Local Machine , and place the certificate into the Trusted People certificate store) and enable the Developer mode in Windows settings, as described in the next step.

Identity information

Name	Describes the contents of the package.
Version	The version number of the package.

Publisher	Describes the publisher information. The Publisher attribute must match the publisher subject information of the certificate used to sign a package.
Processor architecture	Describes the architecture of the code contained in the package.

- [18]. If you have built the package with the Sign the package with the auto-generated self-signed certificate option selected, do not forget to install that generated certificate to the Trusted People certificate store and enable the Developer mode in the Windows settings to install the self-signed package.



- [19]. Click **Go to...**, located next to the **Project folder** field, to open the package containing folder in Windows Explorer.

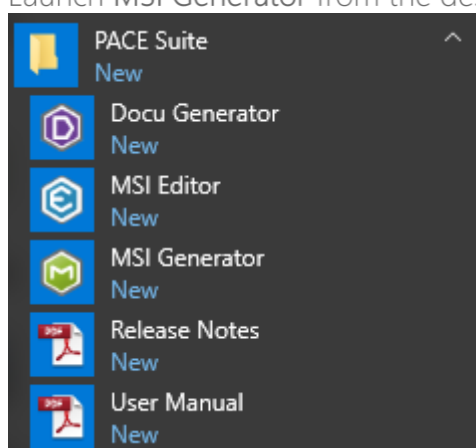
The screenshot shows the 'Edit package - MyPackage.mgp' window. The 'APPX' tab is selected, showing fields for application details (Display name, Publisher display name, Description, Application root folder, Logo) and identity information (Name, Version, Publisher, Processor architecture, Project folder). The 'Project folder' field is set to 'C:\Users\pace\Documents\MSI Generator\Packages\MyPackage'. The 'Go to...' button is visible next to the project folder field. The 'Signature' section has three options: 'Do not sign the package', 'Sign the package with my certificate', and 'Sign the package with auto-generated self-signed certificate'. The 'Build log' section shows a table of build steps with columns for Type, Elapsed, and Step. The 'Build APPX' button is at the bottom right.

Type	Elapsed	Step
	00:00:05	Operation was completed successfully
	00:00:02	Signing C:\Users\pace\Documents\MSI Generator\Packages\MyPackage\A
	00:00:01	Creating C:\Users\pace\Documents\MSI Generator\Packages\MyPackage\U
	00:00:00	HKEY_USERS Registry root ignored.
	00:00:00	HKEY_CURRENT_USER Registry root ignored.
	00:00:00	Processing files
	00:00:00	Processing directories

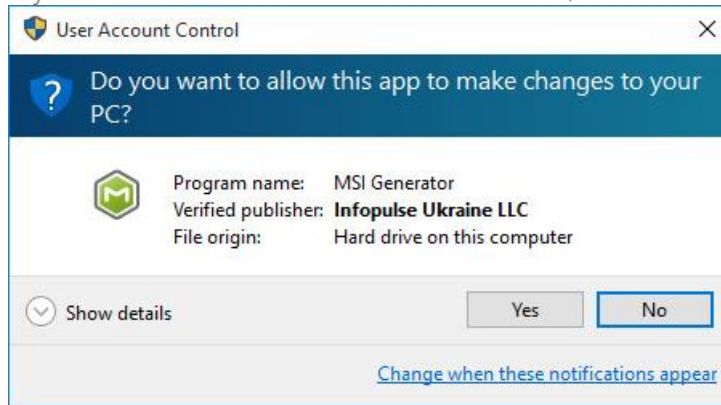
3.4.2 Convert (Repackage) EXE, MSI to APPX

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into Universal Windows Platform app package (APPX) using MSI Generator.

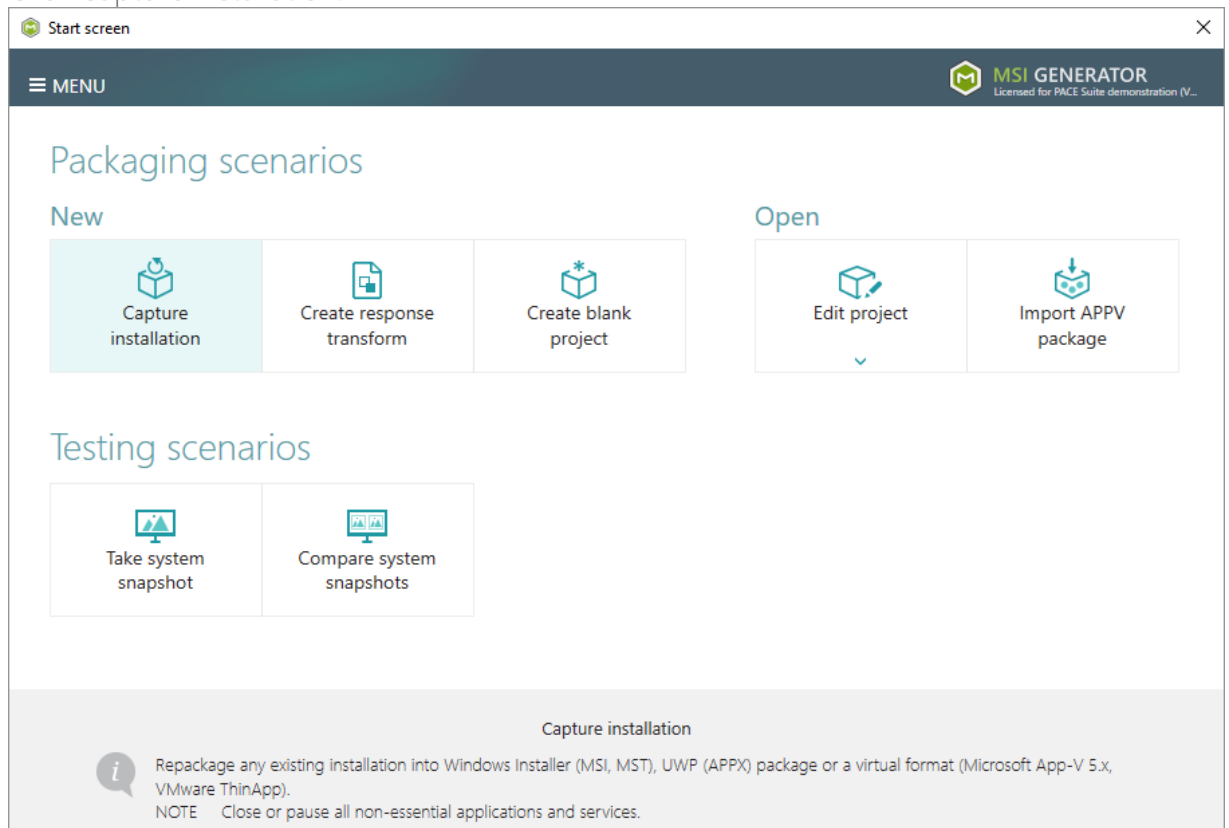
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



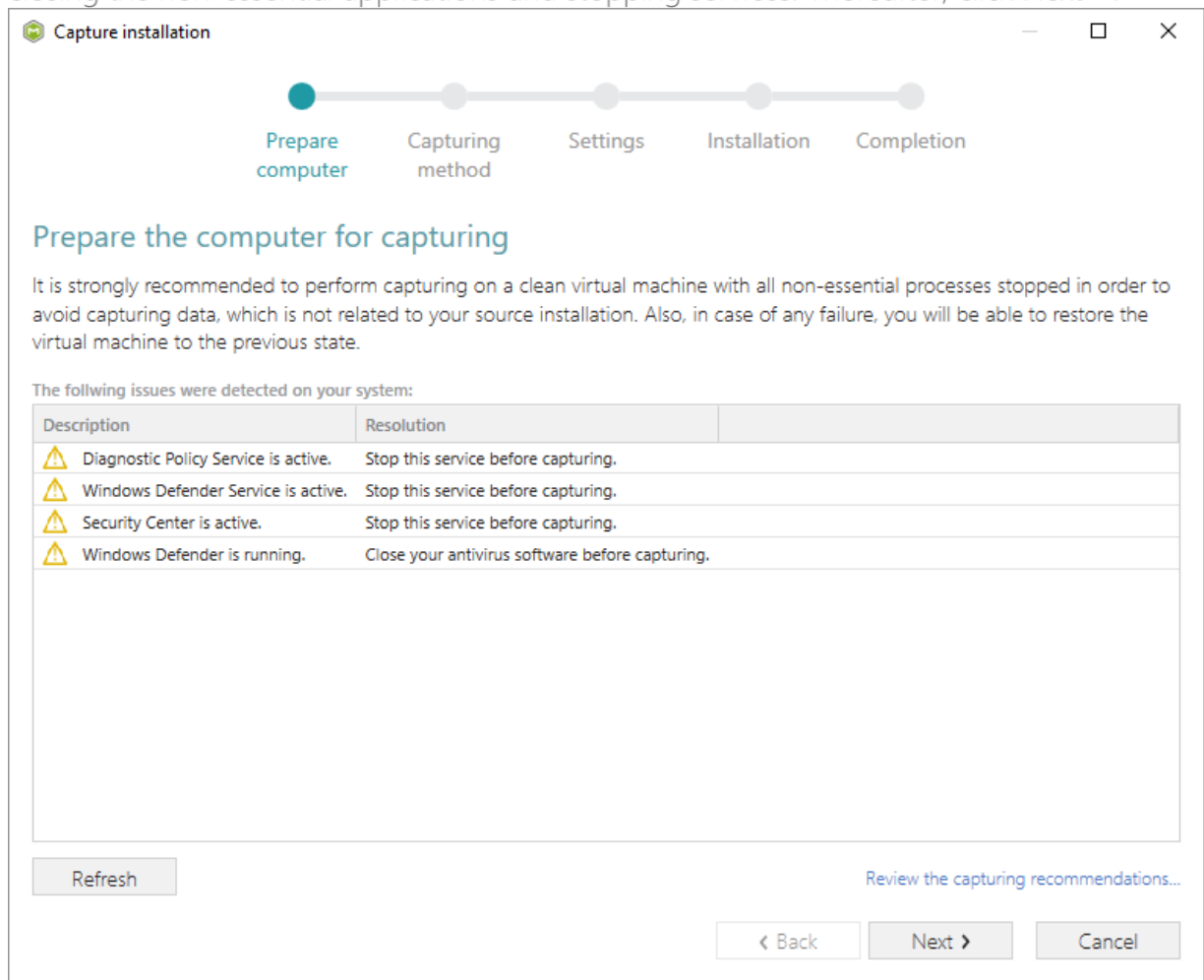
- [2]. If you have User Account Control enabled, click Yes in the opened window.



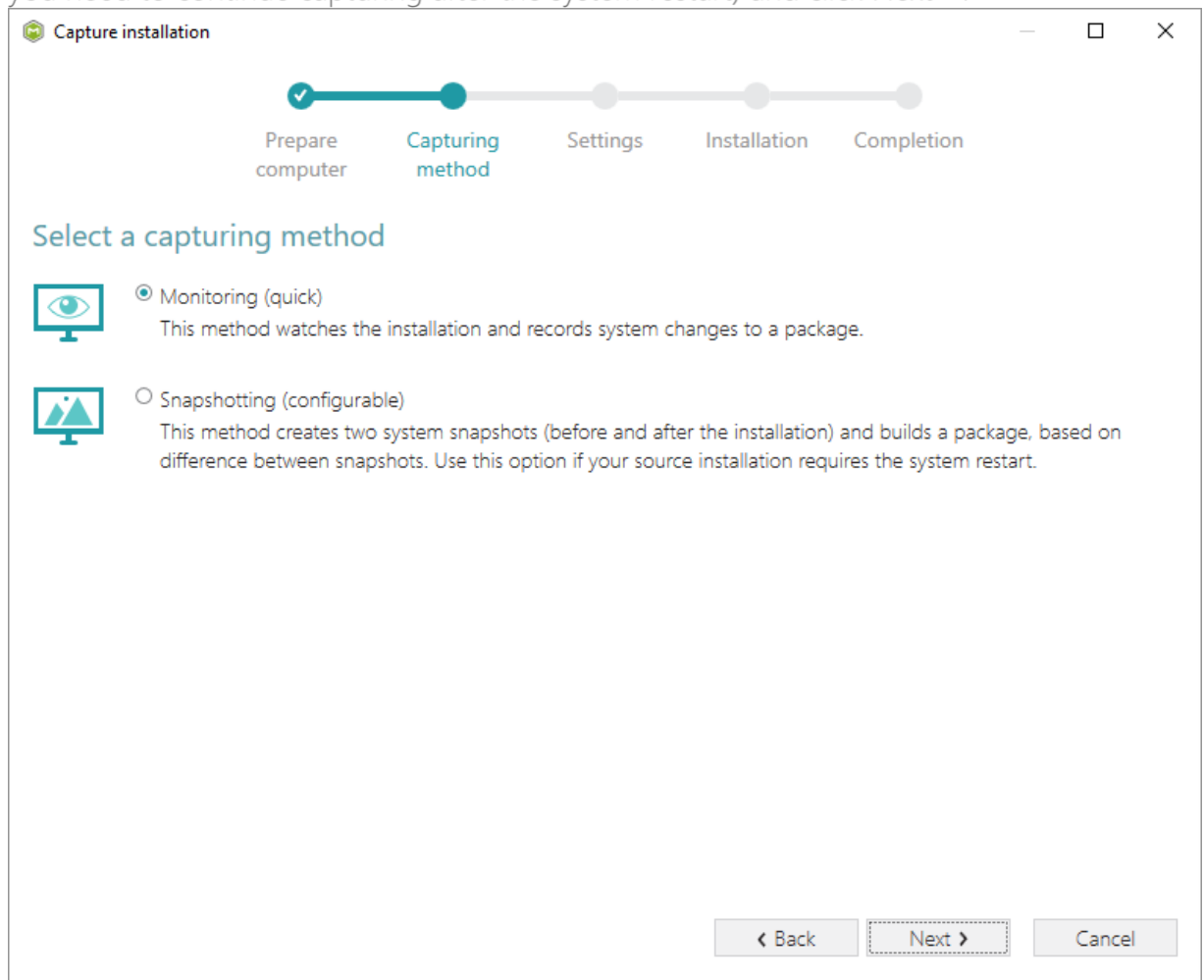
- [3]. Click Capture installation.



- [4]. Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- [5]. Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- [6]. Here you can review and update package name, disable needless exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

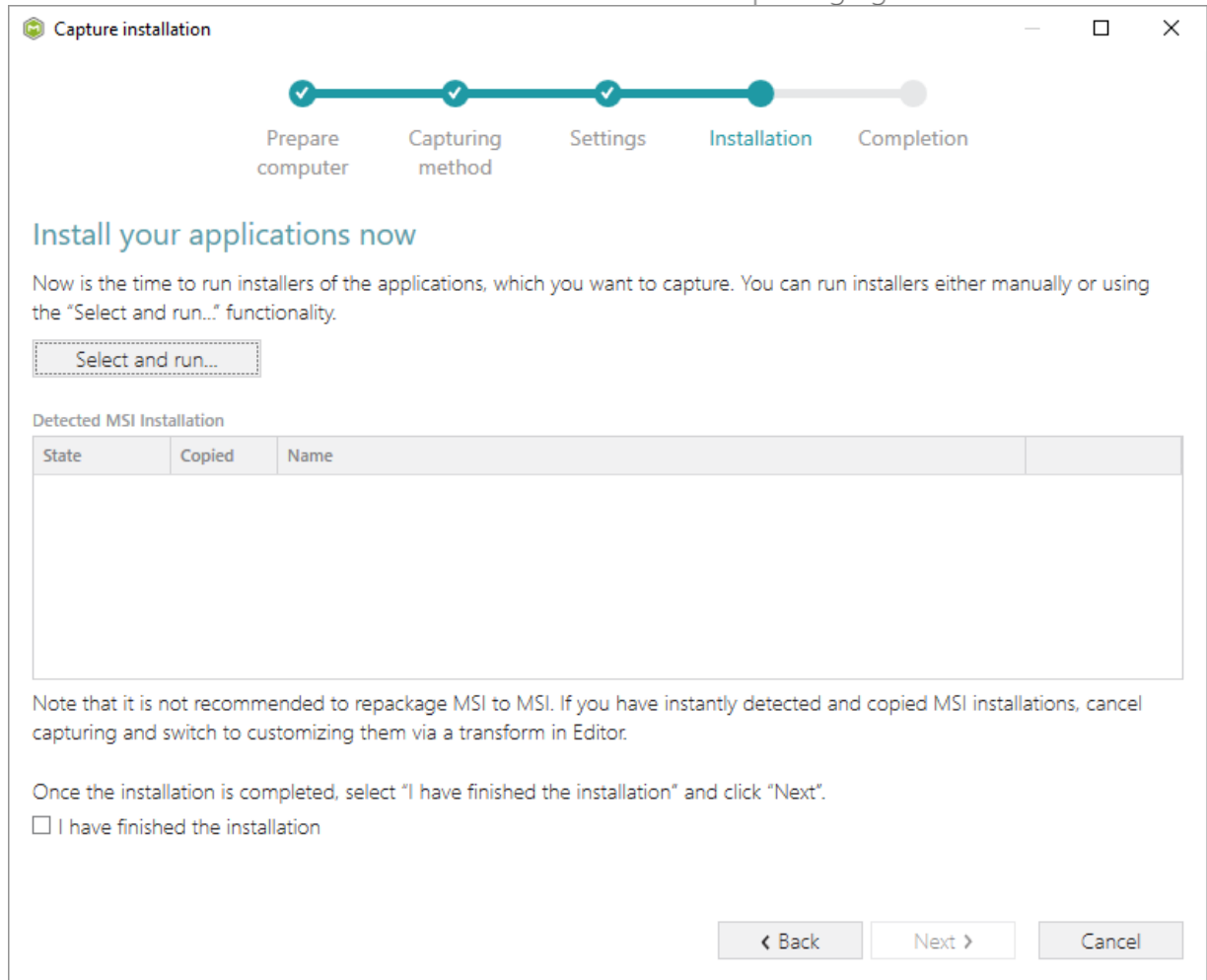
Scanning areas

Application objects:

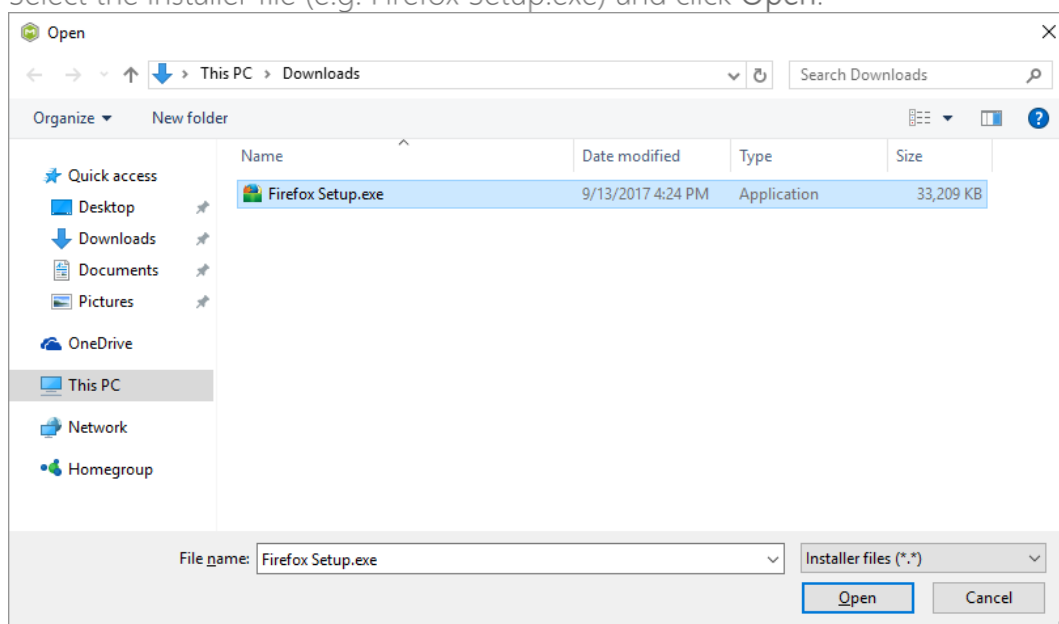
- ☒ Permissions
- ☒ Services
- ☒ Printers

< Back **Next >** Cancel

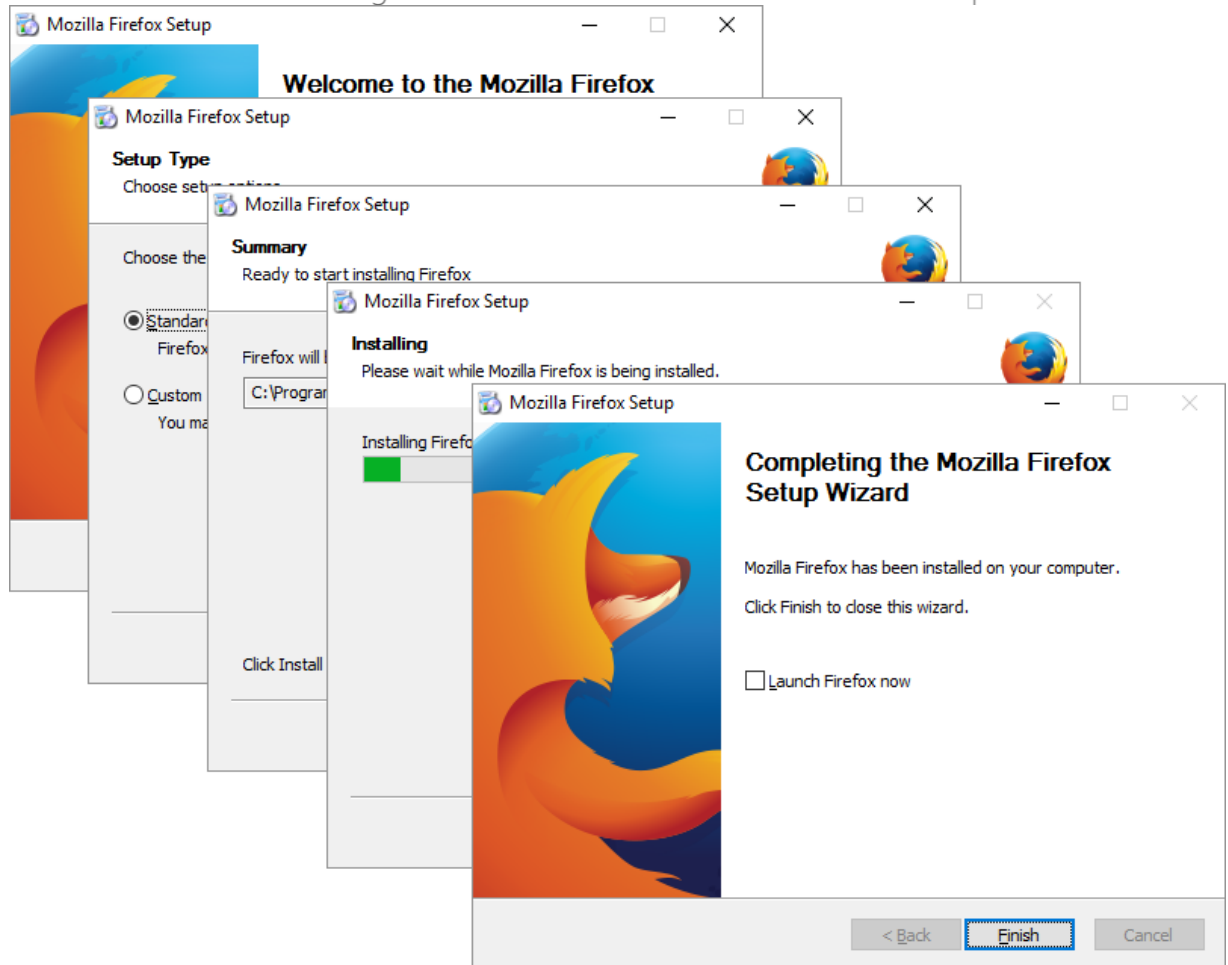
- [7]. Click **Select and run...** to choose source installation for repackaging.



- [8]. Select the installer file (e.g. Firefox Setup.exe) and click **Open**.

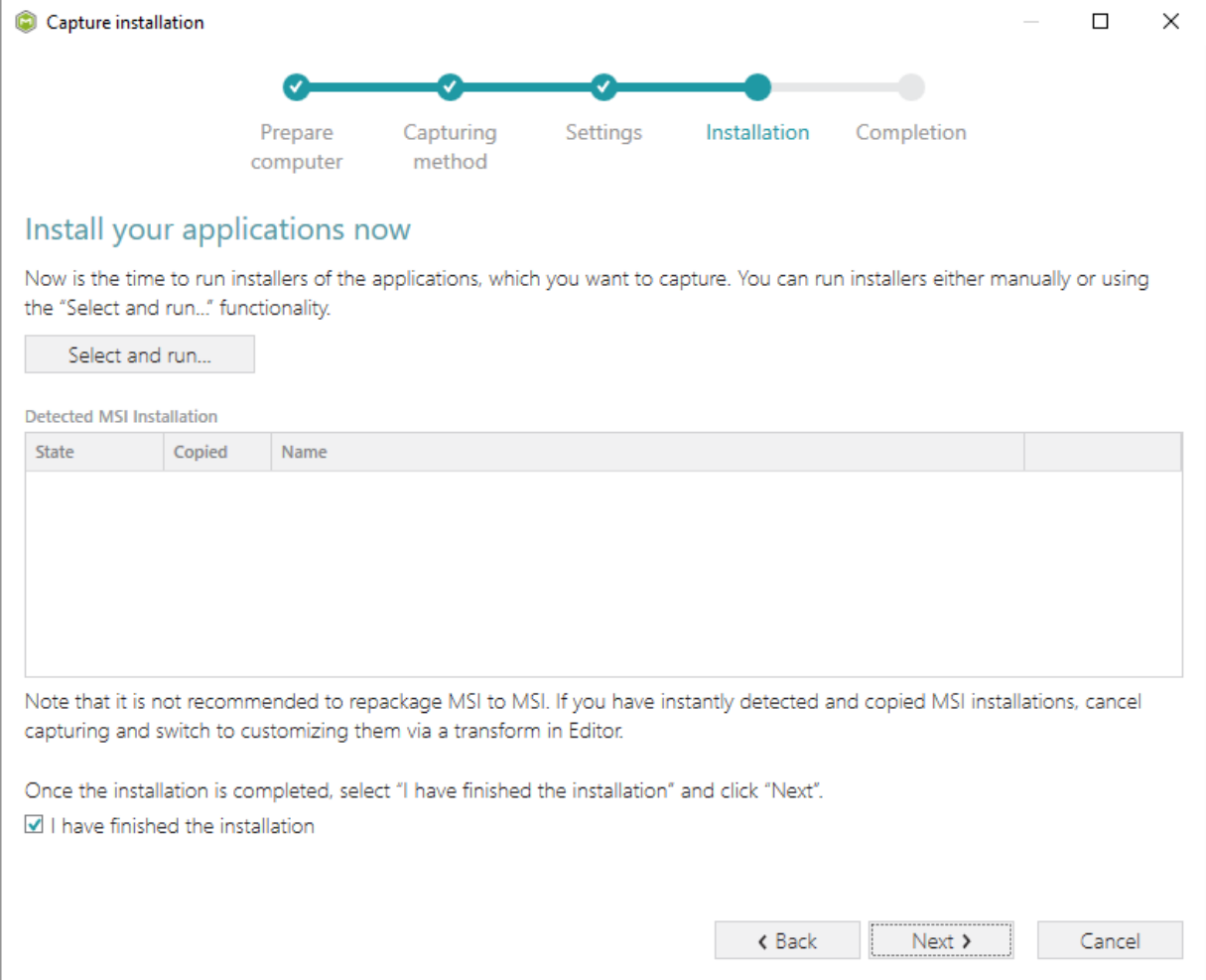


- [9]. Follow the installation dialogs of the launched source installation to complete it.



- [10]. Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.

[11]. Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back Next > Cancel

- [12]. Wait a little, while the capturing process is finishing, filtering captured data and creating the project.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

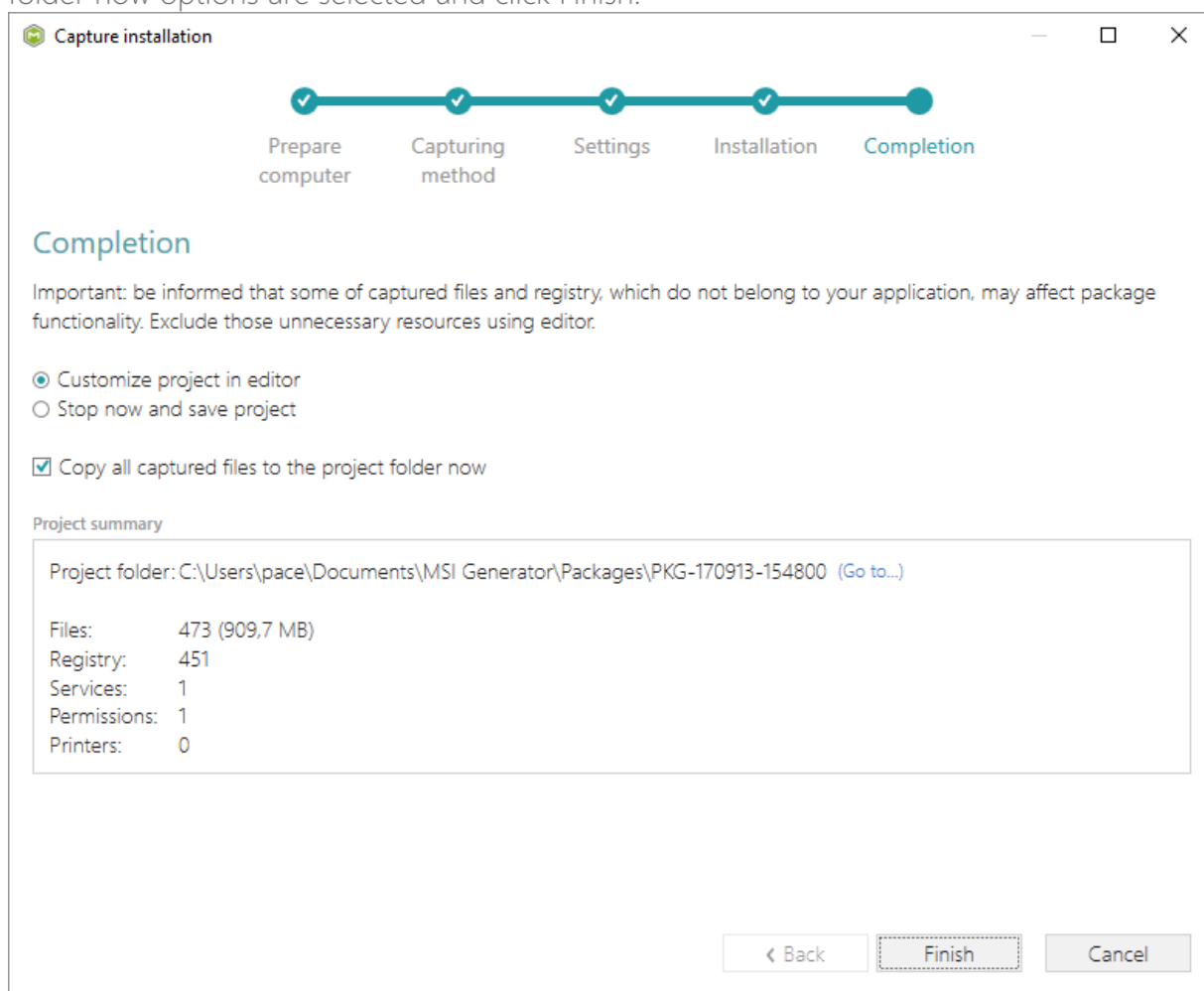
Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

00:08 Scanning Services

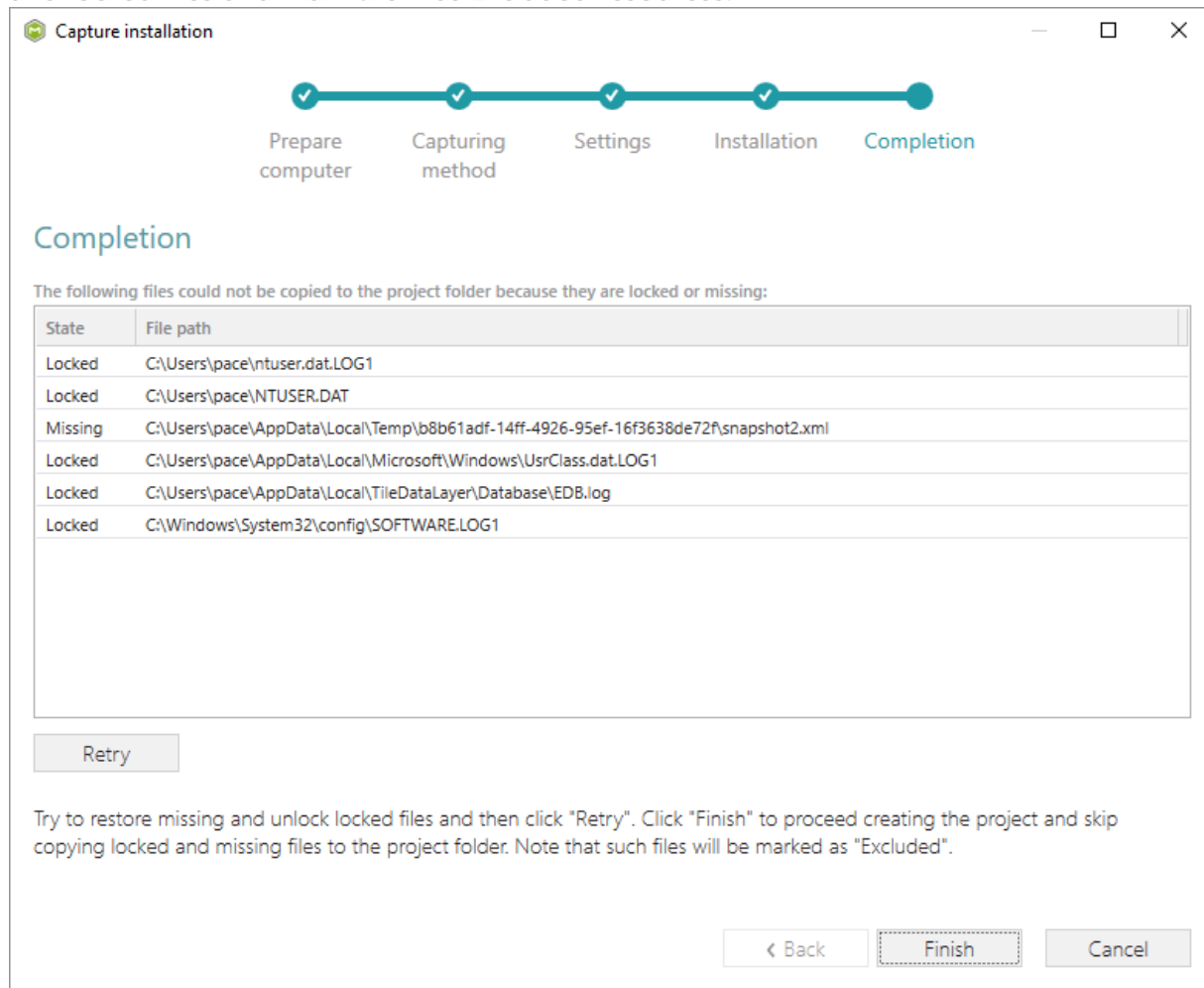
< Back Next > Cancel

- [13]. Leave selected the Customize project in editor and Copy all captured files to the project folder now options are selected and click Finish.



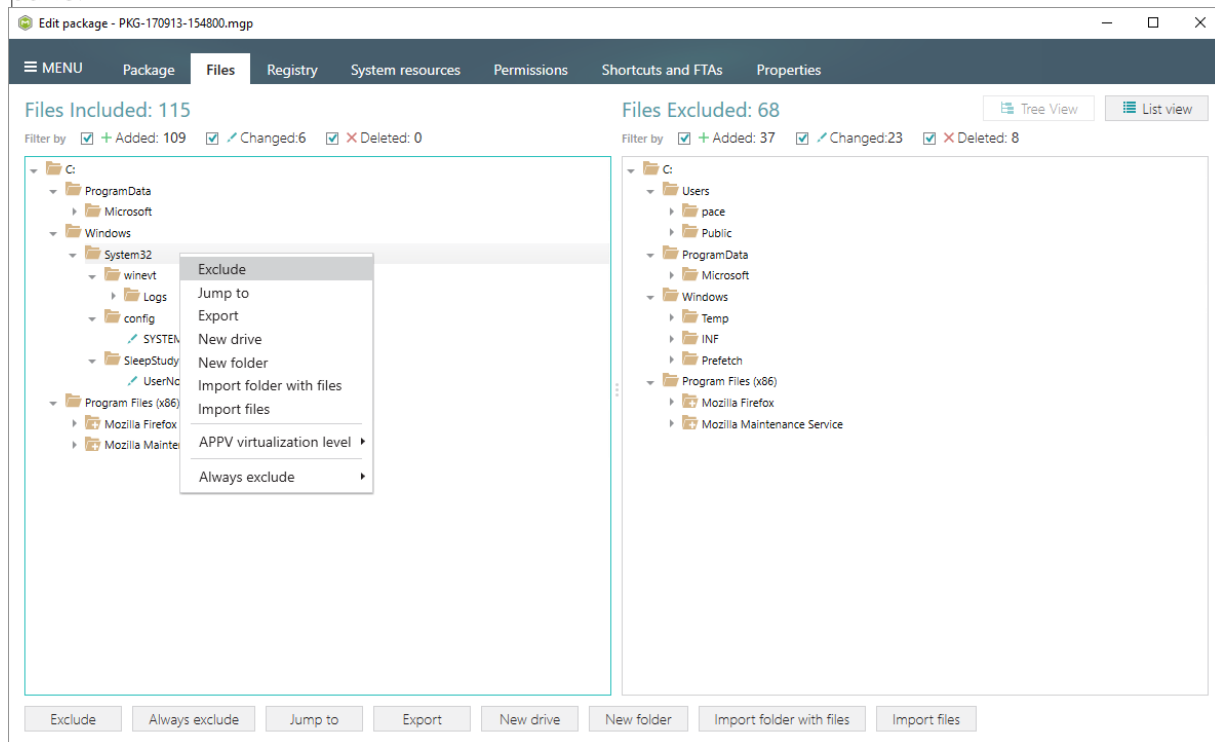
- [14]. The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing

and locked files and mark them as Excluded resources.

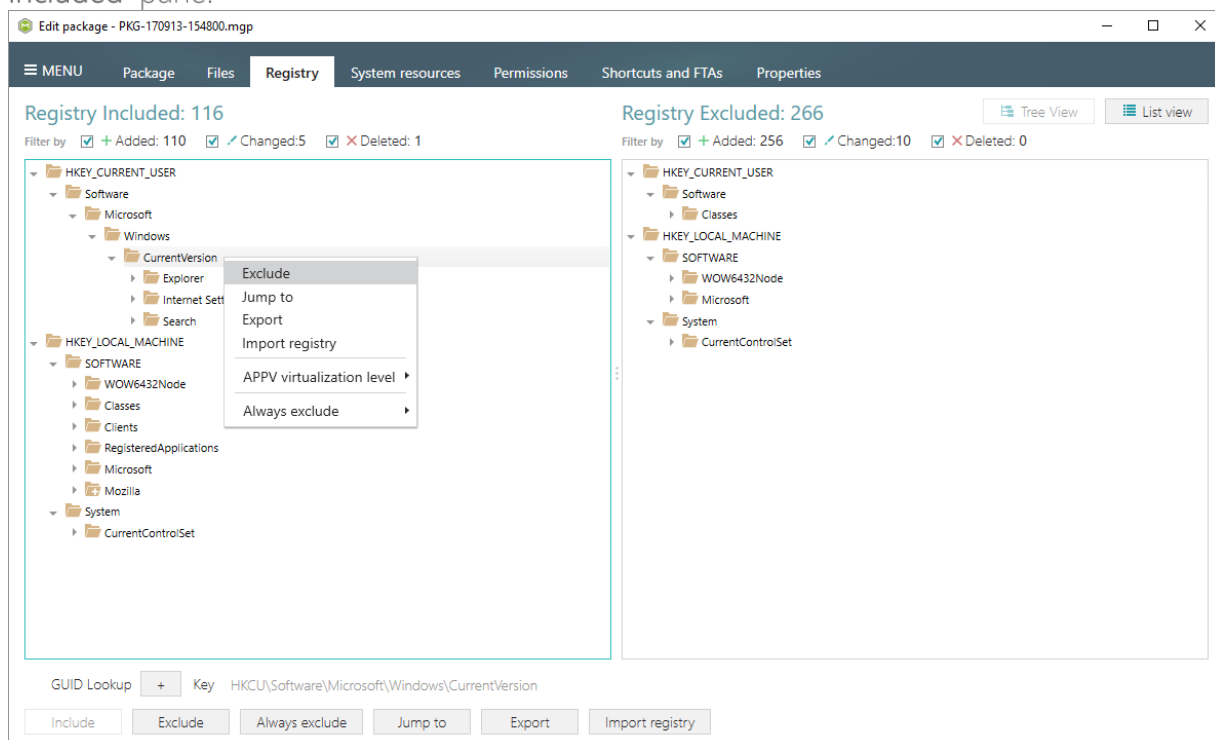


- [15]. Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).
- [16]. In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included'

pane.



- [17]. In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.



- [18]. In order to review and exclude unnecessary APPX apps (shortcuts), go to the Shortcuts and FTAs -> APPX apps tab and uncheck the checkbox, located before the app name in the list, for those apps, which you want to exclude. Using the details pane, you can

update the app display name, logos and so on.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions **Shortcuts and FTAs** Properties

MSI shortcuts **APPX apps** APPV apps and FTAs

Included	Application
<input checked="" type="checkbox"/>	Mozilla Firefox

Application

Display name: Mozilla Firefox

Description: Mozilla Firefox

Executable: C:\Program Files (x86)\Mozilla Firefox\firefox.exe [Browse...](#)

Visual assets

Background color: Transparent [Pick color...](#)

Short name:

App list logo (44x44) [Browse...](#)

Small logo (71x71) [Browse...](#)

Medium logo (150x150) [Browse...](#)

Wide logo (310x150) [Browse...](#)

Large logo (310x310) [Browse...](#)

Show name on: ☐ Medium logo ☐ Wide logo ☐ Large logo

[New application...](#)

- [19]. Finally, to build APPX package from the project, navigate to the Package -> APPX tab, review and update (if necessary) Application details, Identity information, choose the digital signing option and click **Build APPX**. Find description of the APPX settings below in the table.

Edit package - PKG-170913-154800.mgp

MENU **Package** Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST **APPX** APPV THINAPP

Application details

Display name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher display name: Mozilla

Description: Mozilla Firefox 55.0.3 (x86 en-GB)

Application root folder: Place all files to VFS

Logo (50x50) [Browse...](#)

Signature

☐ Do not sign the package

☐ Sign the package with my certificate

Certificate file (.pfx) [Browse...](#)

Certificate password:

☒ Sign the package with auto-generated self-signed certificate

Certificate password:

[How to install the auto-generated self-signed certificate...](#)

Identity information

Name: MozillaFirefox55.0.3x86en-GB

Version: 55.0.3.0

Publisher: CN=Mozilla

Processor architecture: x64

Project folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse...](#) [Go to...](#)

☐ Interrupt building the package for manual editing the manifest

Build log [Open log](#)

Type	Elapsed	Step
------	---------	------

Elapsed time: 00:00 [Review the UWP application limitations...](#) **Build APPX**

Application details

Display name A friendly name of the package that can be displayed to users.

Publisher display name	A friendly name for the publisher of the package that can be displayed to users.
Description	A friendly description that can be displayed to users.
Application root folder	A location of the main application folder. Content of the selected folder will be placed to the package root, instead of VFS.
Logo (50x50)	A logo image of the package that can be displayed to users.

Signature

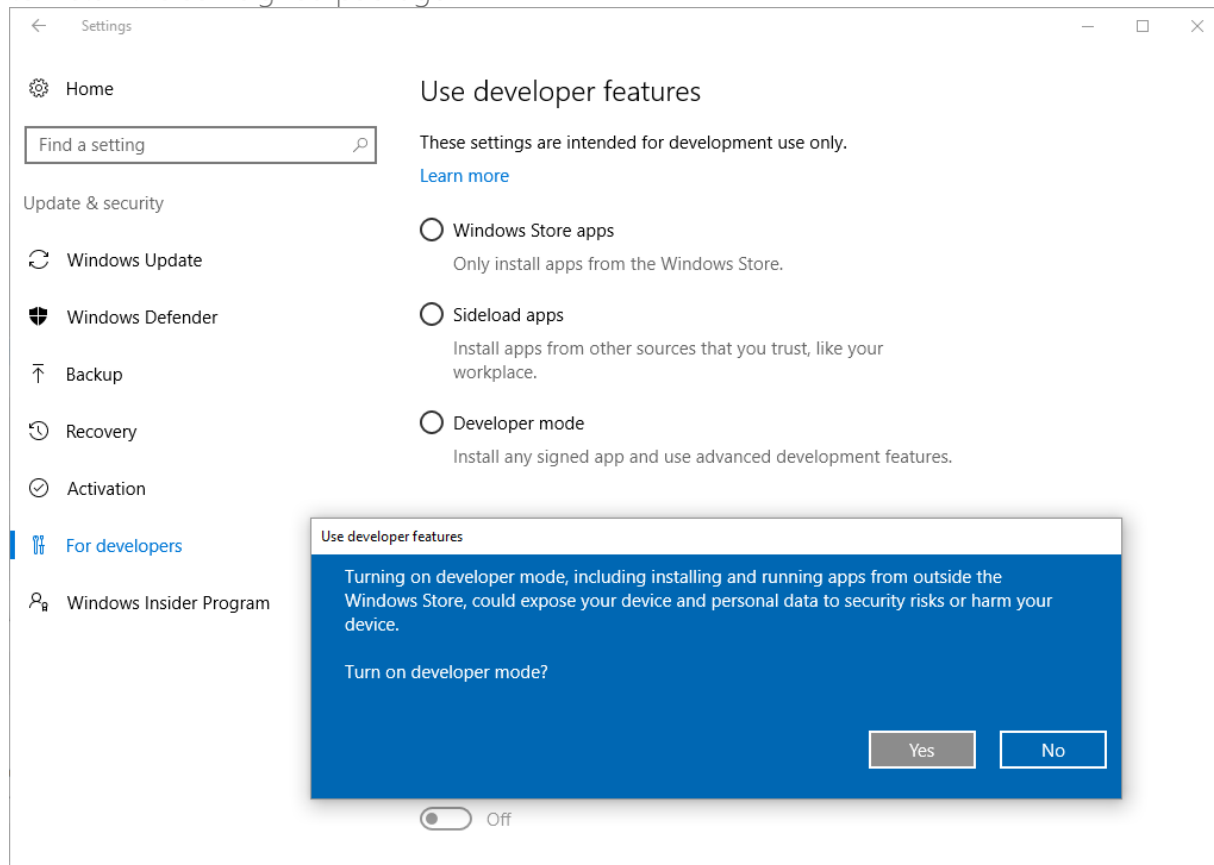
Do not sign the package	Use this option if you are planning to submit the package to Windows Store or sign it manually.
Sign the package with my certificate	Use this option to sign the generated package with the valid certificate that you already have.
Sign the package with auto-generated self-signed certificate	Use this option to generate the self-signed certificate and sign the package with this certificate. NOTE In order to deploy your package, install the generated certificate before (double-click the auto-generated.pfx file, and in the Certificate Import Wizard, install the certificate onto the Local Machine , and place the certificate into the Trusted People certificate store) and enable the Developer mode in Windows settings, as described in the next step.

Identity information

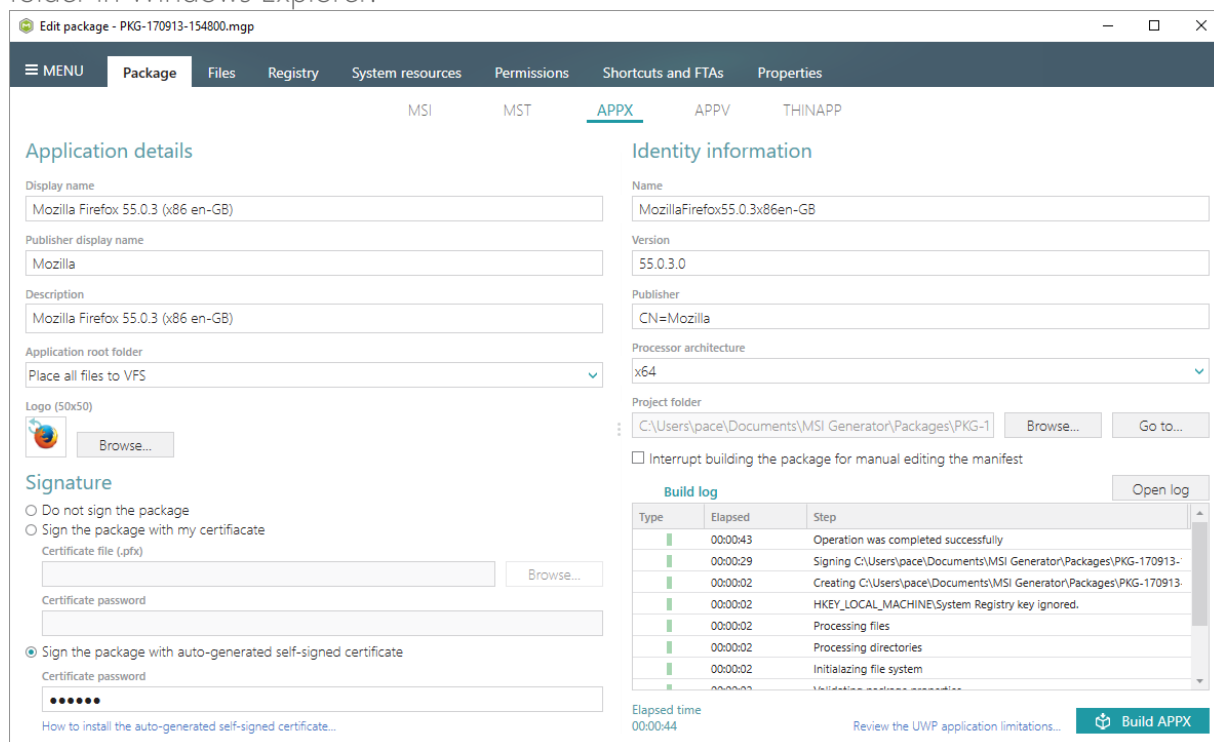
Name	Describes the contents of the package.
Version	The version number of the package.
Publisher	Describes the publisher information. The Publisher attribute must match the publisher subject information of the certificate used to sign a package.
Processor architecture	Describes the architecture of the code contained in the package.

[20]. If you have built the package with the **Sign the package with the auto-generated self-signed certificate** option selected, do not forget to install that generated certificate to the Trusted People certificate store and enable the **Developer mode** in the Windows settings

to install the self-signed package.



[21]. Click Go to..., located next to the Project folder field, to open the package containing folder in Windows Explorer.



3.5 New APPV

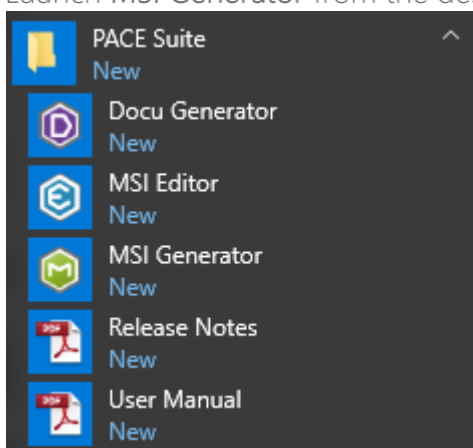
Choose a scenario that better suits your needs:

- **Create APPV from Scratch**, described in section 3.5.1
Create a new empty project in MSI Generator, add folders, files, registry entries and APPV apps, shortcuts and FTAs to this project and then generate the APPV 5.0/5.1/1607 (5.2) package from this project.
- **Convert (Repackage) EXE, MSI to APPV 5.x**, described in section 3.5.2
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into APPV 5.0/5.1/1607 (5.2) package using MSI Generator.

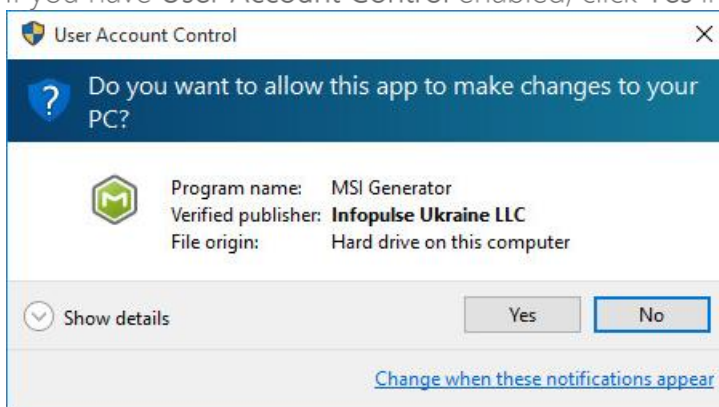
3.5.1 Create APPV from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries and APPV apps, shortcuts and FTAs to this project and then generate the APPV 5.0/5.1/1607 (5.2) package from this project.

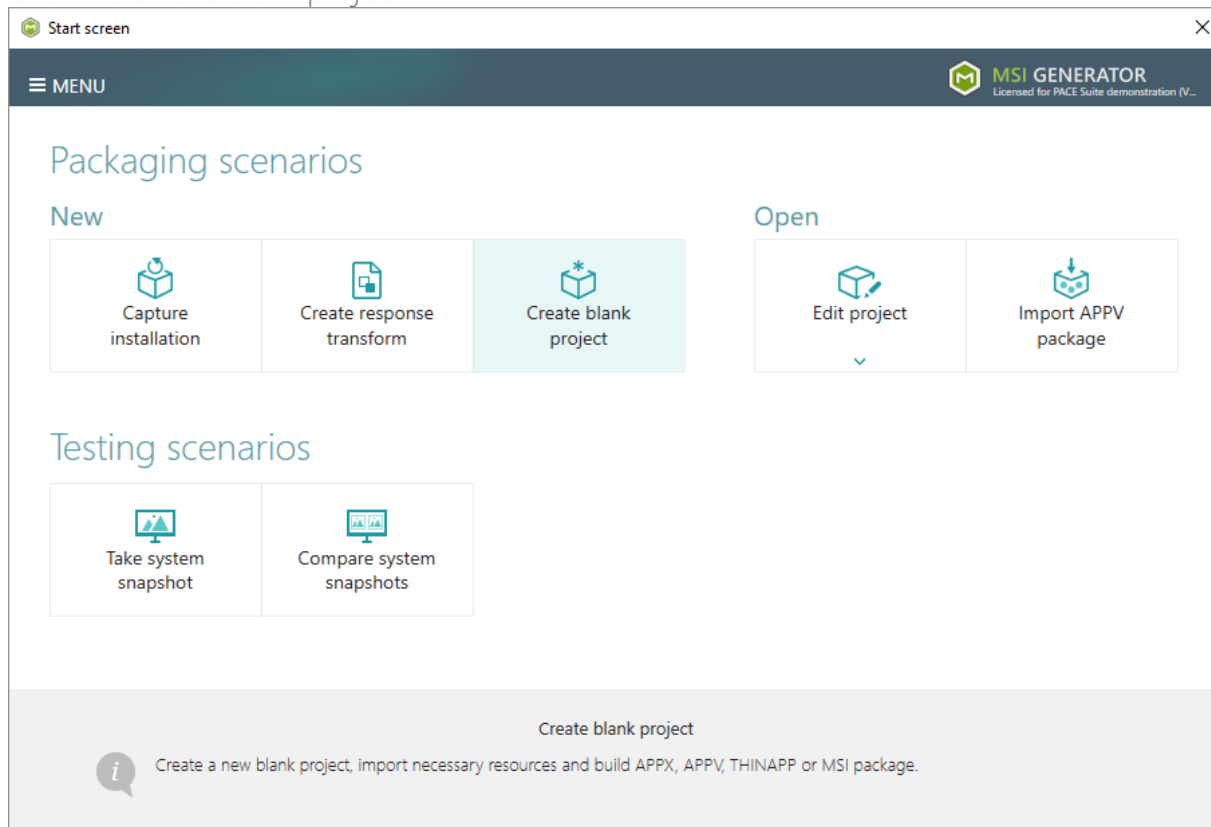
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



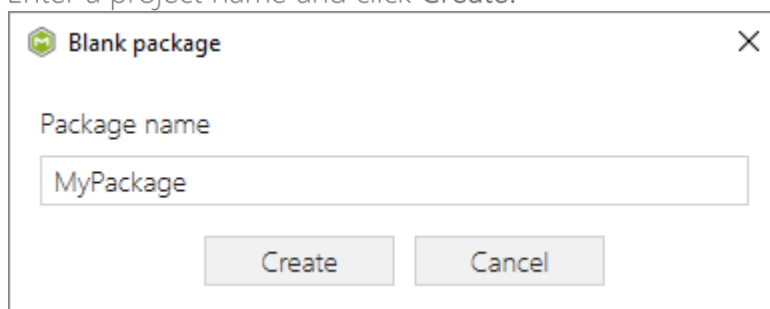
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click the Create blank project.

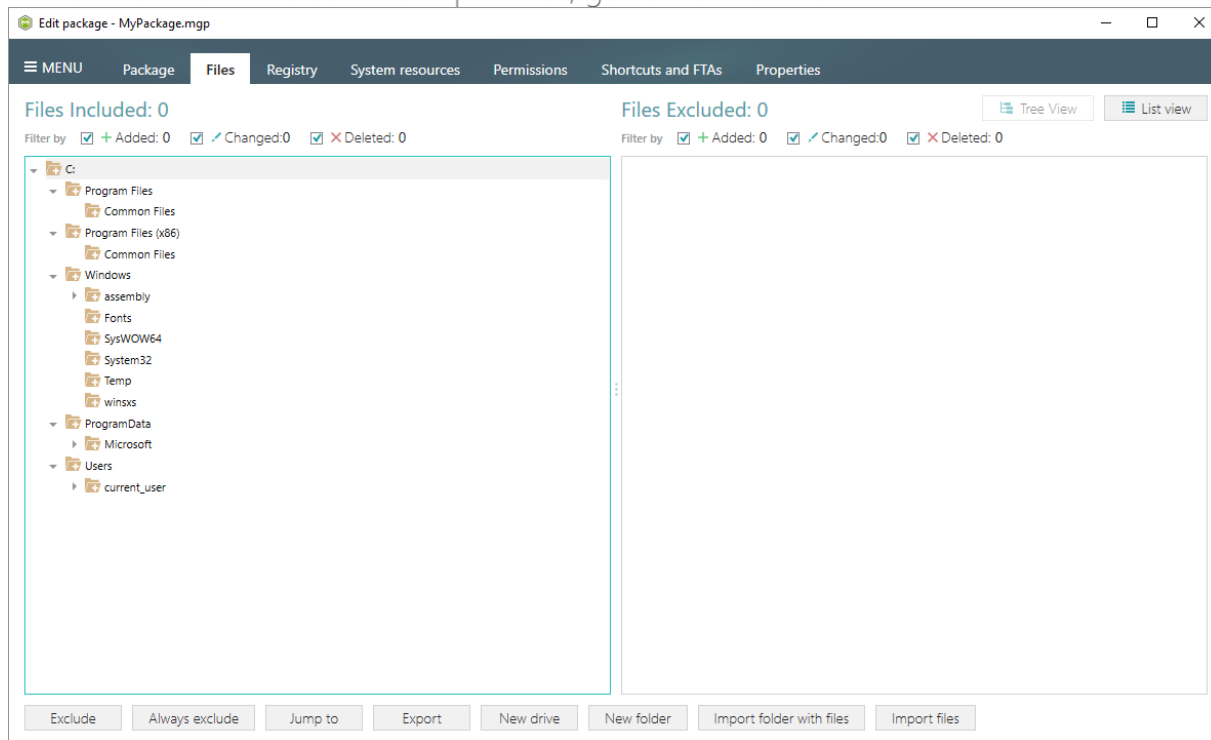


- [4]. Enter a project name and click Create.

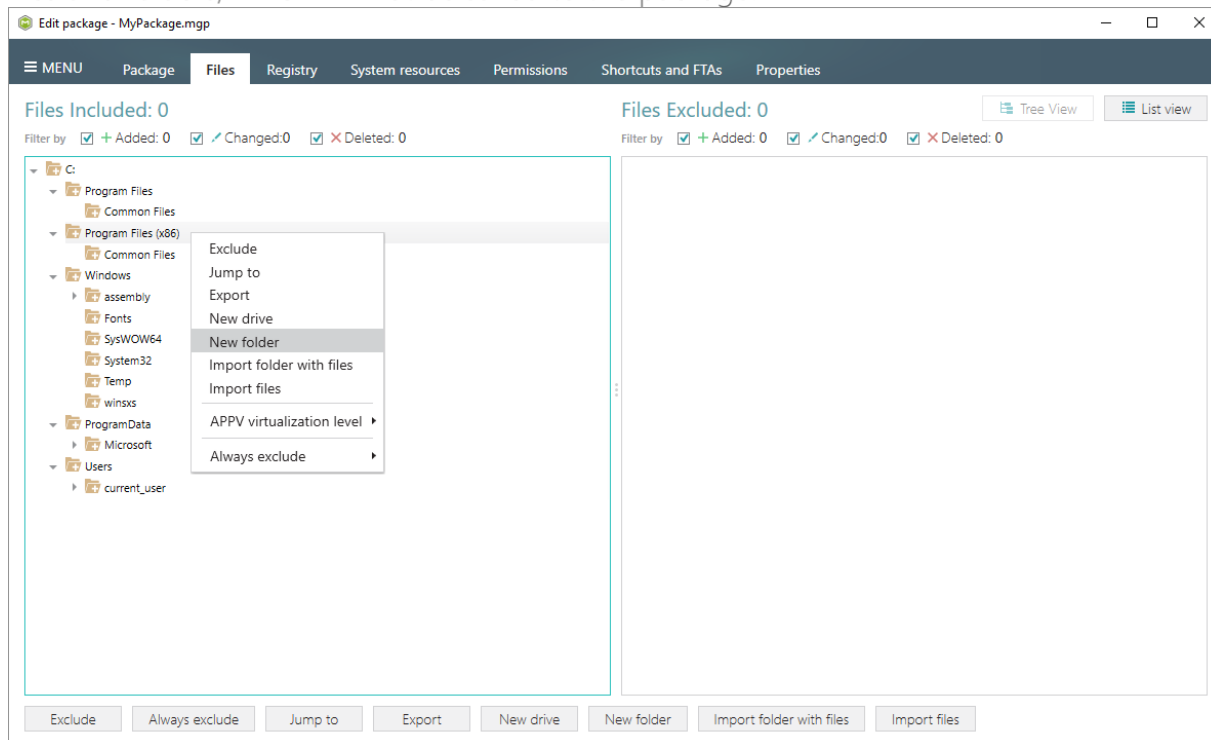


- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [11] describe how to create a new folder, import files to this folder and change the default APPV virtualization level of a folder; the steps from [12] to [15] describe how to import registry entries from the REG file and change the default APPV virtualization level of a registry key; the steps from [16] to [21] describe how create a new APPV application, its shortcuts and associate file extensions with the application; and two last steps [22] and [23] describe how to build APPV package from the prepared project.

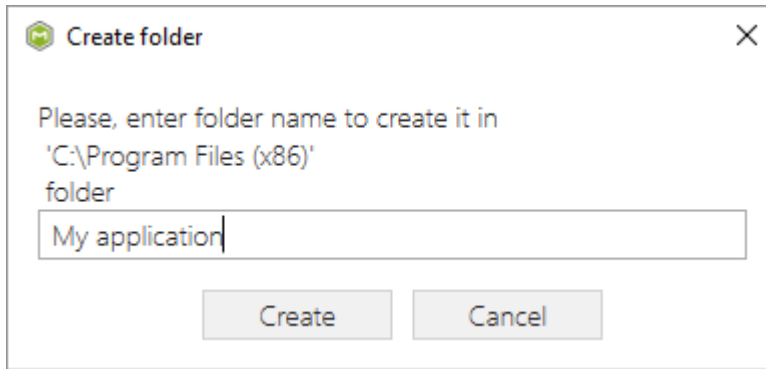
- [6]. In order to create a folder and import files, go to the Files tab.



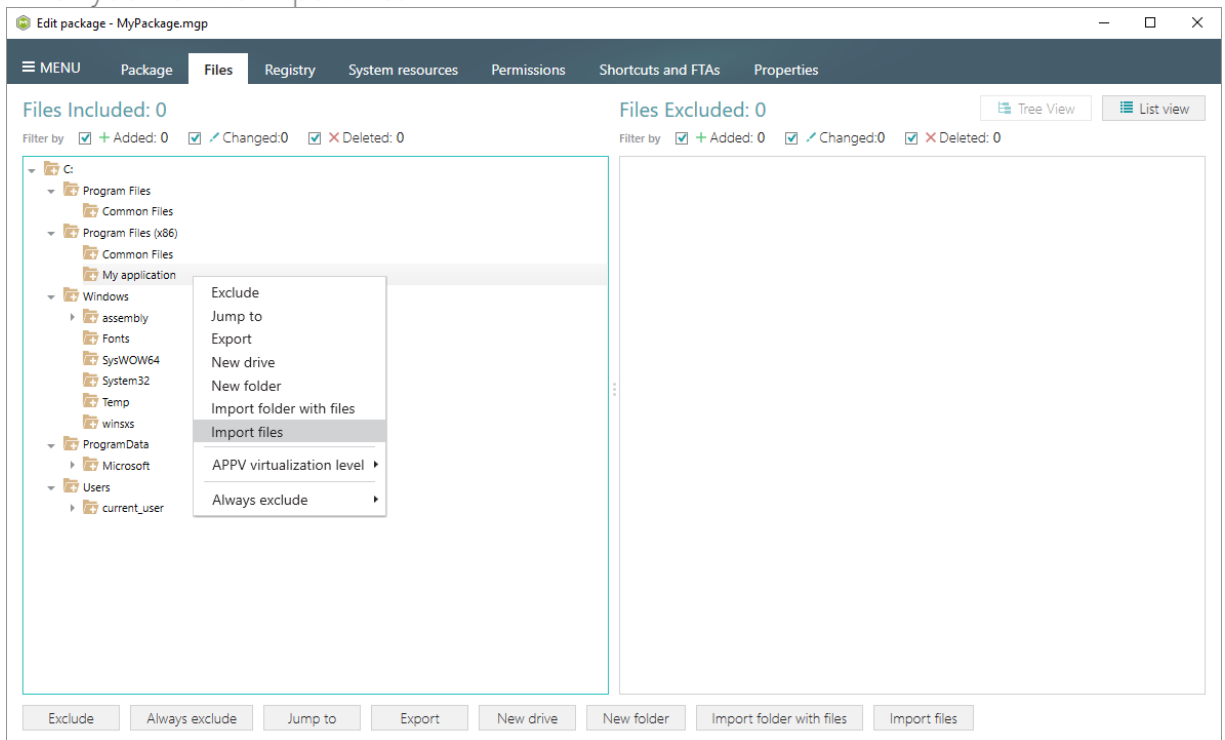
- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



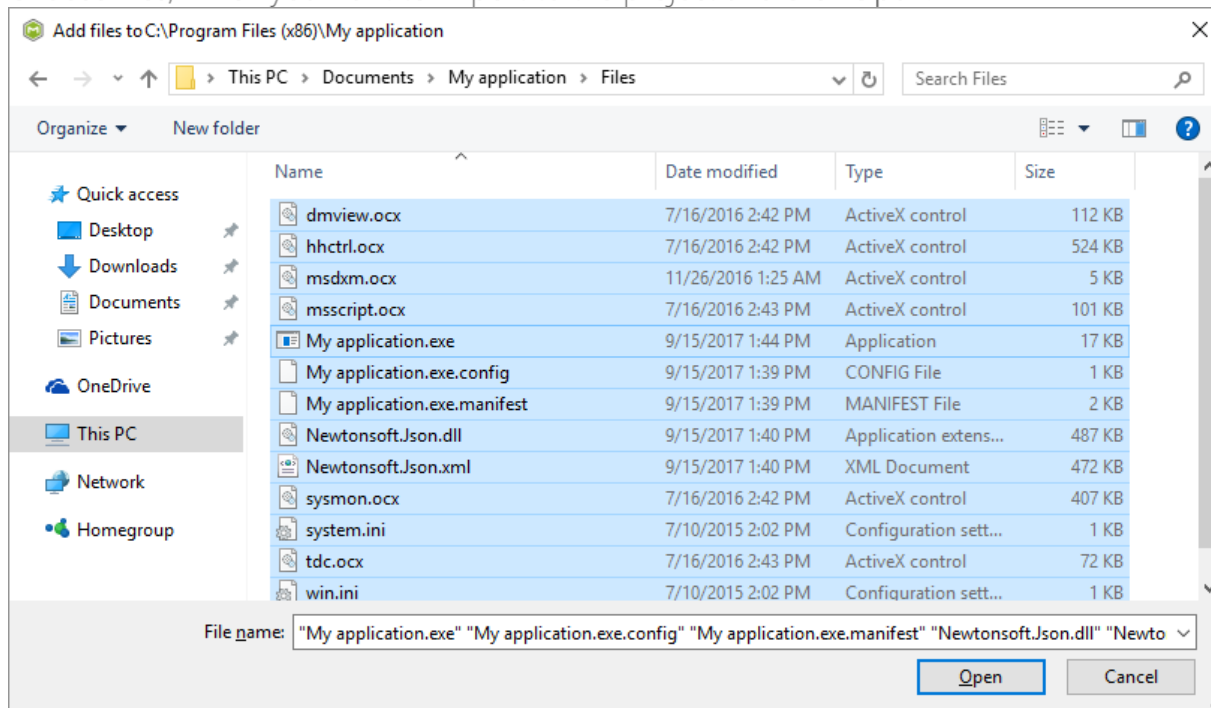
- [8]. Enter a folder name and click Create.



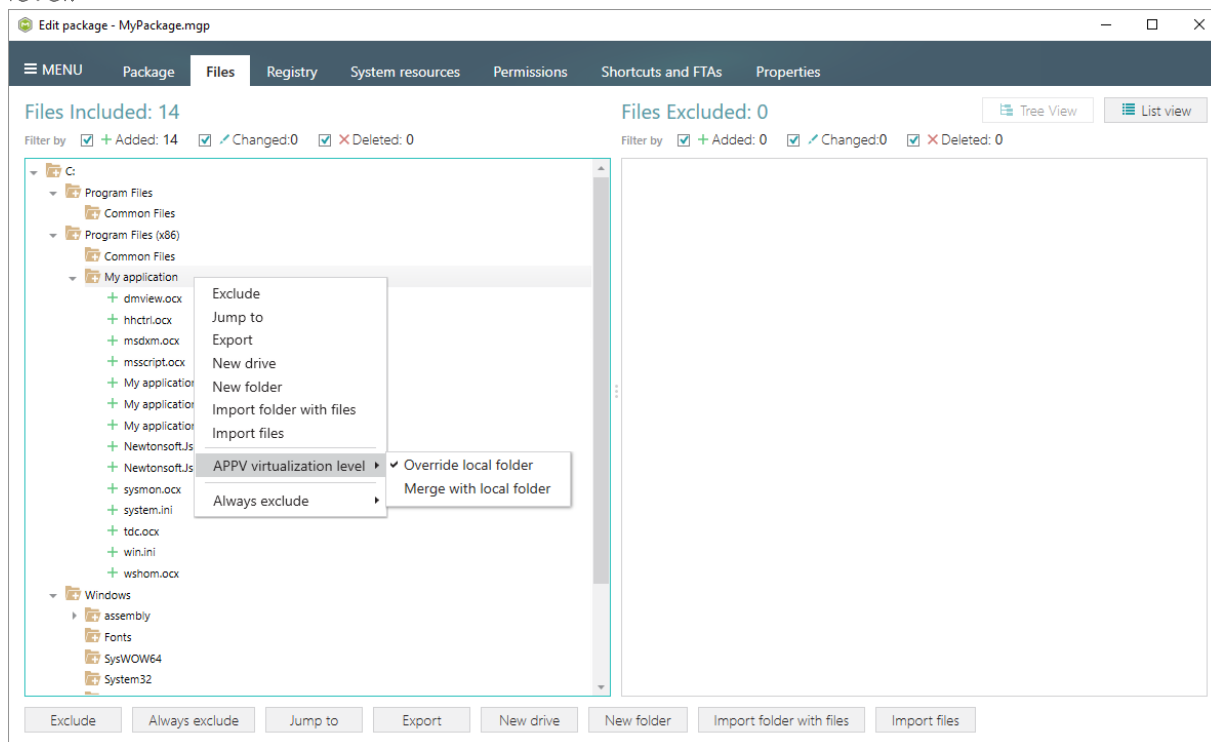
- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



[10]. Choose files, which you want to import to the project and click **Open**.

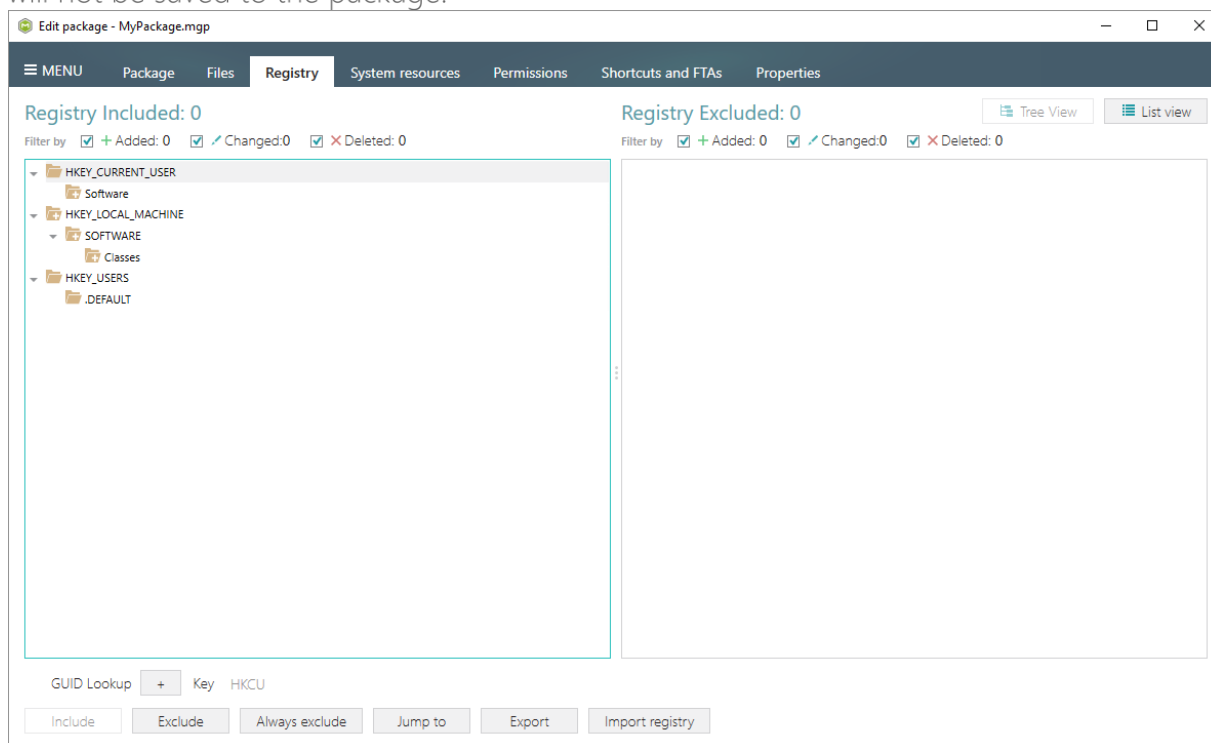


[11]. In order to change the default virtualization (isolation) level of a folder, open the folder context menu, and select either **Override local folder** or **Merge with local folder** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local folder** option selected, it means that this option is inherited from the parent folder. Child folder could not have the **Merge with local folder** virtualization level, if parent one has the **Override local folder** virtualization level.

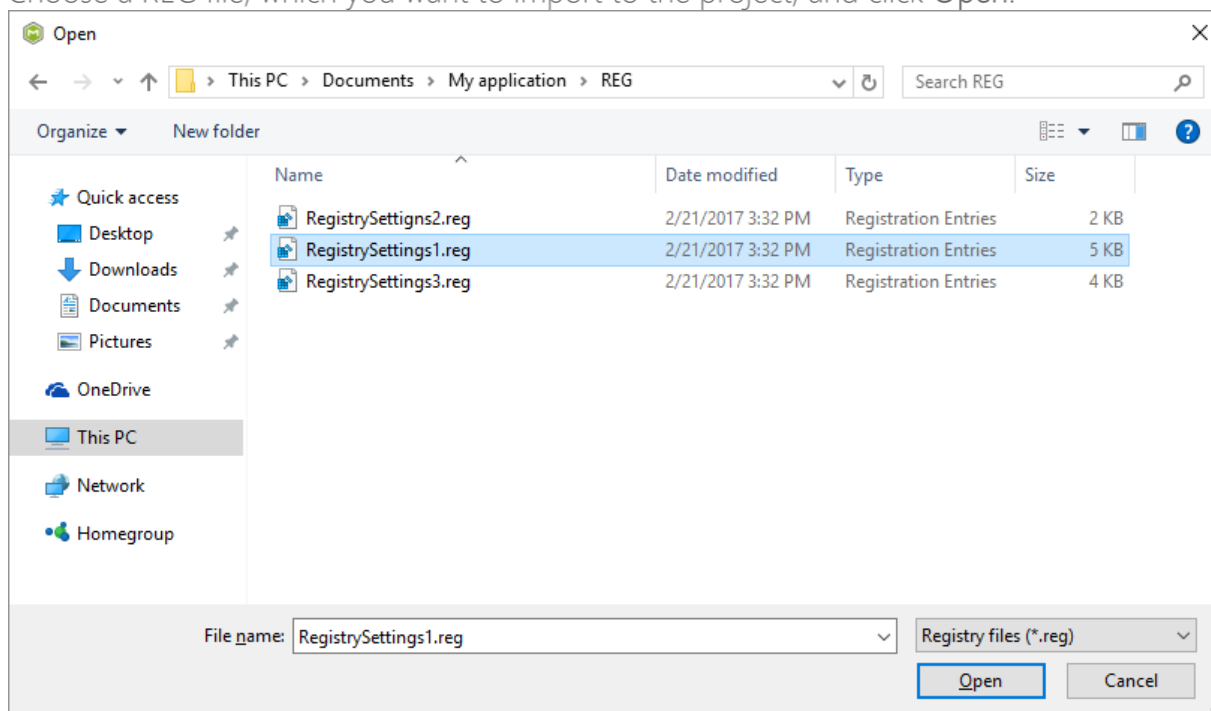


[12]. In order to import registry entries from the REG file, go to the **Registry** tab and click the **Import registry** button, located in the bottom part of the window. Note that the left

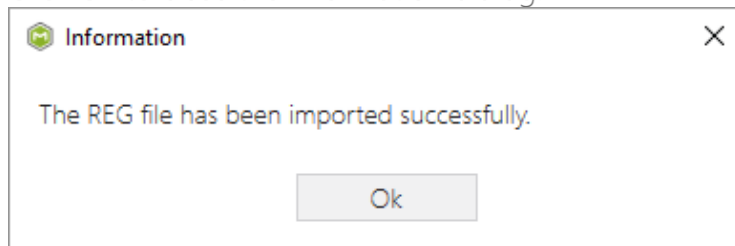
'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



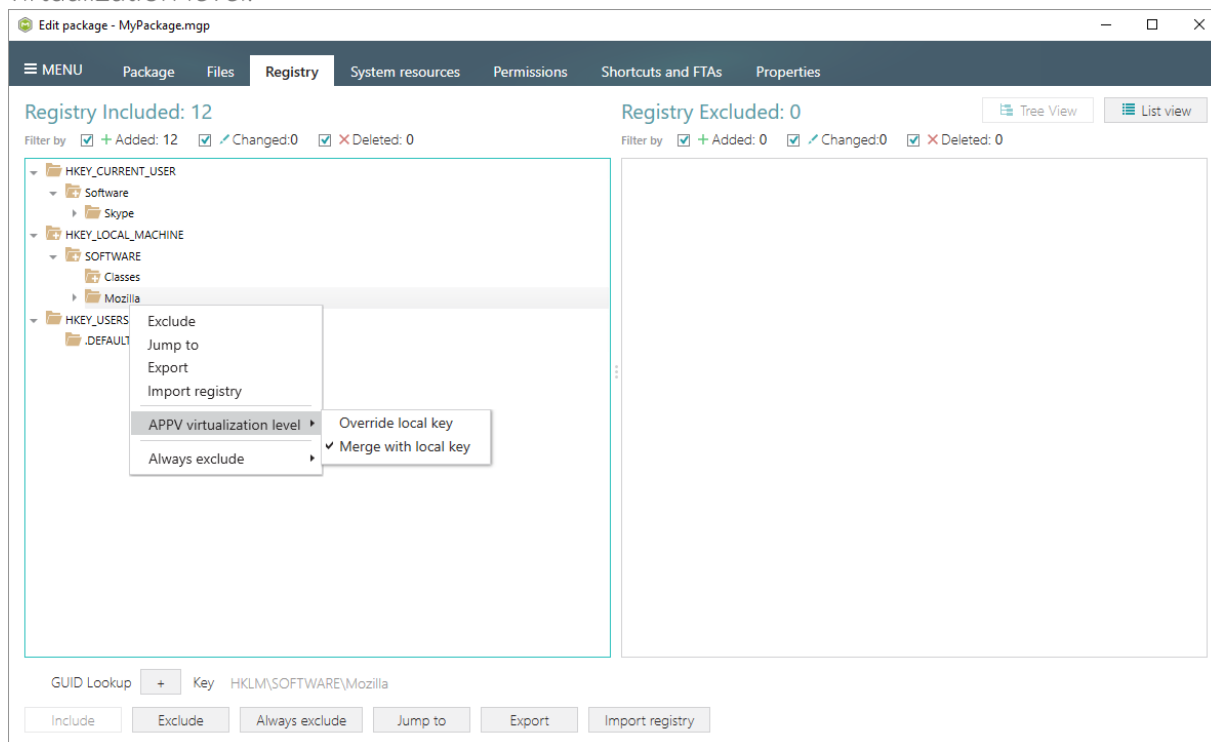
[13]. Choose a REG file, which you want to import to the project, and click Open.



[14]. Click Ok to close the information dialog.

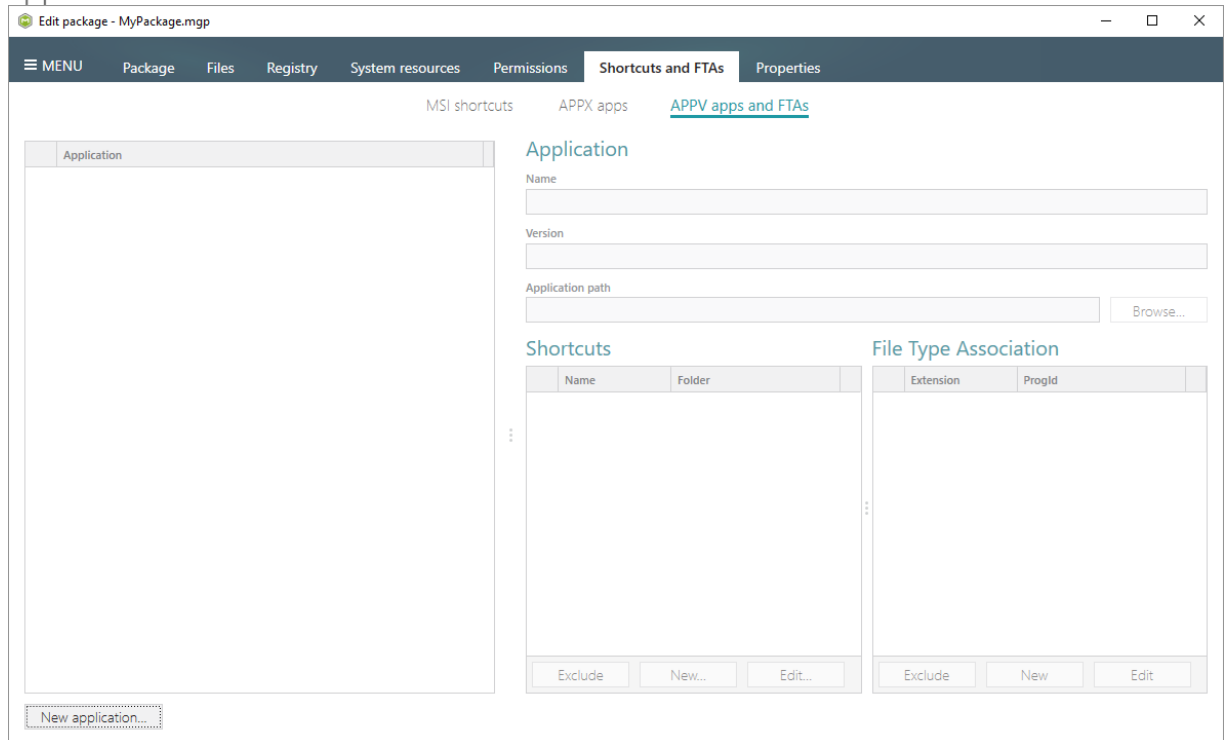


[15]. In order to change the default virtualization (isolation) level of a registry key, open the registry key context menu, and select either **Override local key** or **Merge with local key** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local key** option selected, it means that this option is inherited from the parent registry key. A child registry key could not have the **Merge with local key** virtualization level, if the parent one has the **Override local key** virtualization level.

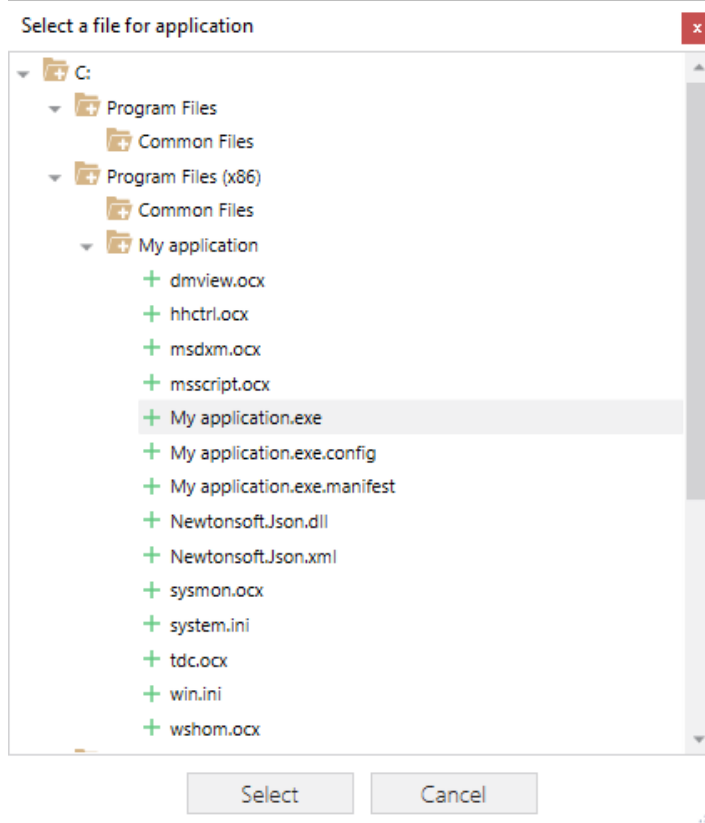


[16]. If you need to create an APPV application, its shortcuts and associate file extensions with this application, go to the **Shortcuts and FTAs** -> **APPV apps and FTAs** tab and click **New**

application...



[17]. Select the main executable file (EXE) of your application from the tree and click Select.



[18]. To create a shortcut for the application, click **New...** in the **Shortcuts** section.

The screenshot shows the 'Edit package - MyPackage.mgp' window with the 'Shortcuts and FTAs' tab selected. The window has a menu bar with 'MENU', 'Package', 'Files', 'Registry', 'System resources', 'Permissions', 'Shortcuts and FTAs', and 'Properties'. Below the menu bar, there are tabs for 'MSI shortcuts', 'APPX apps', and 'APPV apps and FTAs'. The 'APPV apps and FTAs' tab is active. On the left, there is a list of applications with 'My application' checked. On the right, there are sections for 'Application' and 'Shortcuts'. The 'Application' section has fields for 'Name' (My application), 'Version' (4.3.2.234), and 'Application path' (C:\Program Files (x86)\My application\My application.exe). The 'Shortcuts' section has a table with columns 'Name' and 'Folder'. Below the table are buttons 'Exclude', 'New...', and 'Edit...'. The 'File Type Association' section has a table with columns 'Extension' and 'ProgId' and buttons 'Exclude', 'New', and 'Edit'.

Application	
<input checked="" type="checkbox"/>	My application

Application

Name: My application

Version: 4.3.2.234

Application path: C:\Program Files (x86)\My application\My application.exe Browse...

Shortcuts

Name	Folder
------	--------

Exclude New... Edit...

File Type Association

Extension	ProgId
-----------	--------

Exclude New Edit

New application...

[19]. Enter a shortcut name, select a destination location ("Folder" field), icon and click **Save**.

The screenshot shows the 'Shortcut' dialog box. It has fields for 'Name' (My application 4.4), 'Folder' (C:\ProgramData\Microsoft\Windows\Start Menu\Programs), 'Arguments' (empty), 'Start in' (C:\Program Files (x86)\My application), 'Run' (Normal), and 'Icon' (a purple icon). There is a 'Change icon' button next to the icon field. At the bottom are 'Save' and 'Cancel' buttons.

Shortcut

Name: My application 4.4

Folder: C:\ProgramData\Microsoft\Windows\Start Menu\Programs

Arguments:

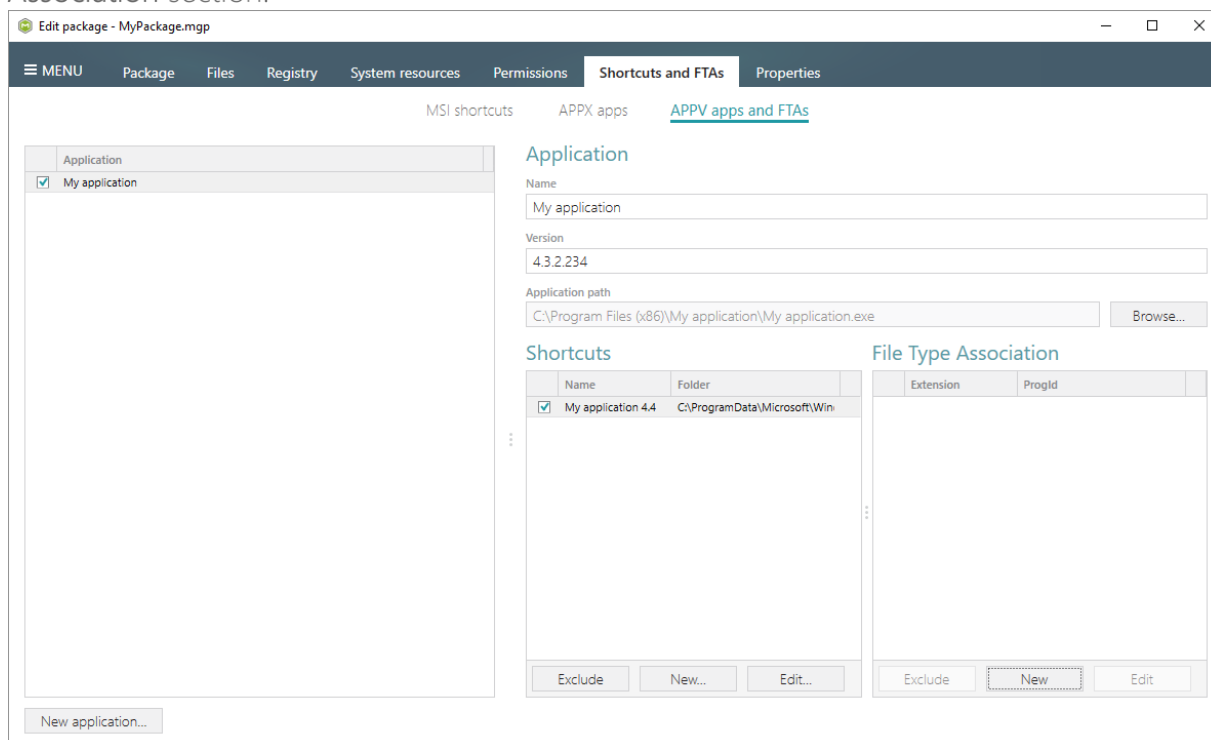
Start in: C:\Program Files (x86)\My application

Run: Normal

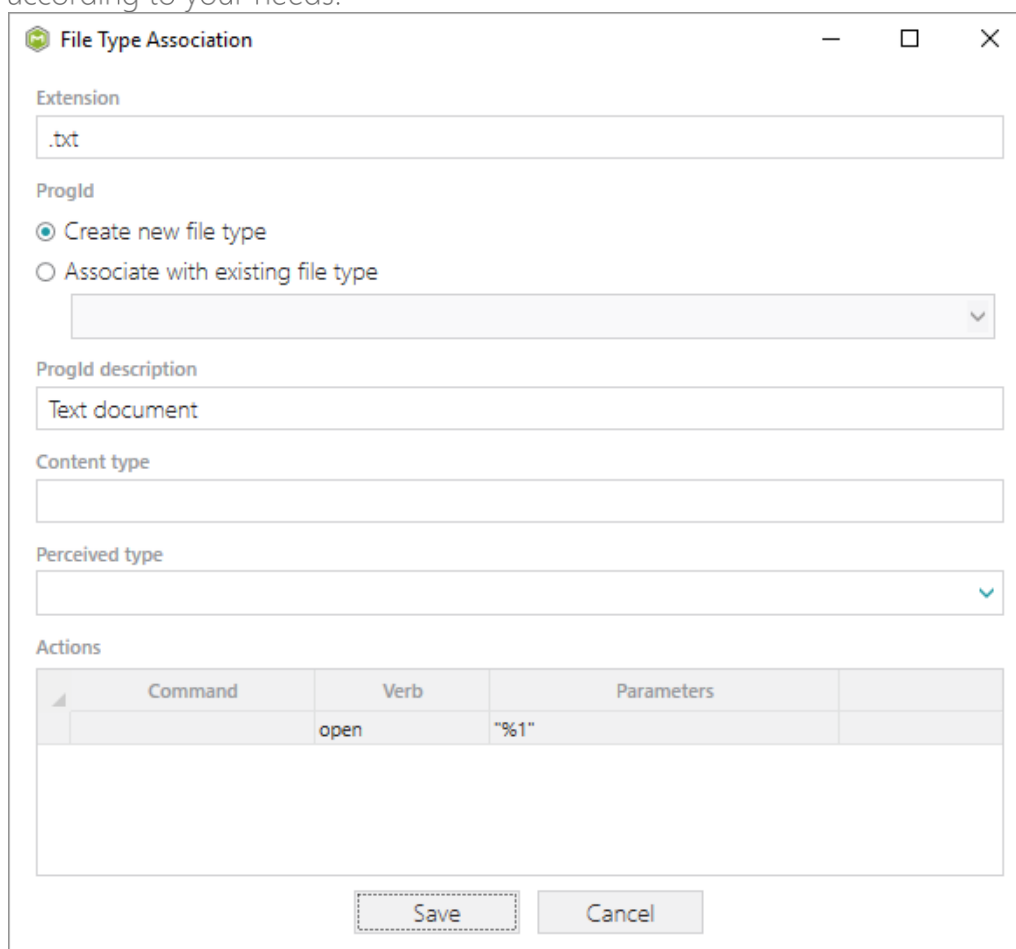
Icon: Change icon

Save Cancel

[20]. To associate some file extension with your application, click **New...** in the File Type Association section.



[21]. Enter a file extension and click **Save**. Optionally you can modify other FTA settings according to your needs.



- [22]. In order to build APPV package from your project, navigate to the Package -> APPV tab, update Application Details, select the necessary App-V Settings, App-V package format version, and then click Build APPV.

Edit package - MyPackage.mgp

Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: My application

Version: 1.0.0

Publisher: My publisher

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

- ☐ Force application to be fully downloaded before launching.

Target OS:

- ☒ Allow this package to be run on any operating system
- ☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

- ☐ Allow all named objects to interact with the local system
- ☐ Allow all COM objects to interact with the local system
- ☐ Allow virtual application full write permissions to the virtual file system
- ☐ Enable Browser Helper Objects

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: MyPackage

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\MyPai Browse... Go to...

Description:

Build log Open log

Type	Elapsed	Step

Elapsed time: 00:00 Build APPV

- [23]. Click Go to..., located next to the Project folder field, to open the package containing folder in Windows Explorer.

Edit package - MyPackage.mgp

Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: My application

Version: 1.0.0

Publisher: My publisher

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

- ☐ Force application to be fully downloaded before launching.

Target OS:

- ☒ Allow this package to be run on any operating system
- ☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

- ☐ Allow all named objects to interact with the local system
- ☐ Allow all COM objects to interact with the local system
- ☐ Allow virtual application full write permissions to the virtual file system
- ☐ Enable Browser Helper Objects

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: MyPackage

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\MyPai Browse... Go to...

Description:

Build log Open log

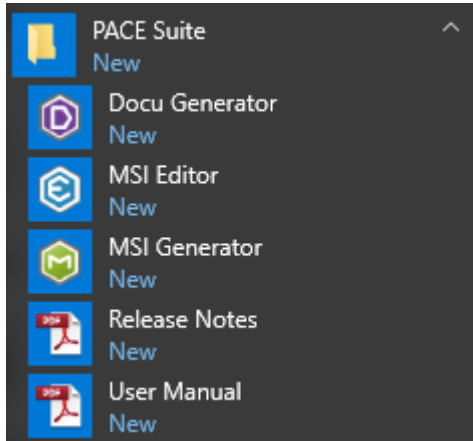
Type	Elapsed	Step
	00:00:04	Operation was completed successfully
	00:00:01	Saving package
	00:00:01	Processing software clients
	00:00:01	Processing environment variables
	00:00:01	Processing URL protocols
	00:00:01	Processing application capabilities
	00:00:01	Processing FTAs
	00:00:01	Processing browser plugins
	00:00:01	Processing COM objects
	00:00:01	Processing services
	00:00:01	Processing registry

Elapsed time: 00:00:05 Build APPV

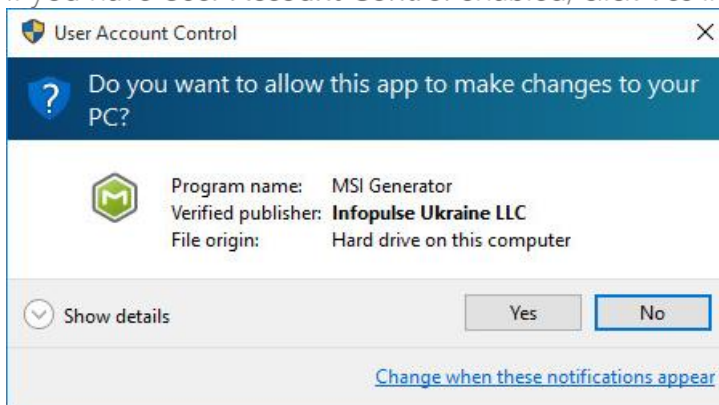
3.5.2 Convert (Repackage) EXE, MSI to APPV 5.x

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into APPV 5.0/5.1/1607 (5.2) package using MSI Generator.

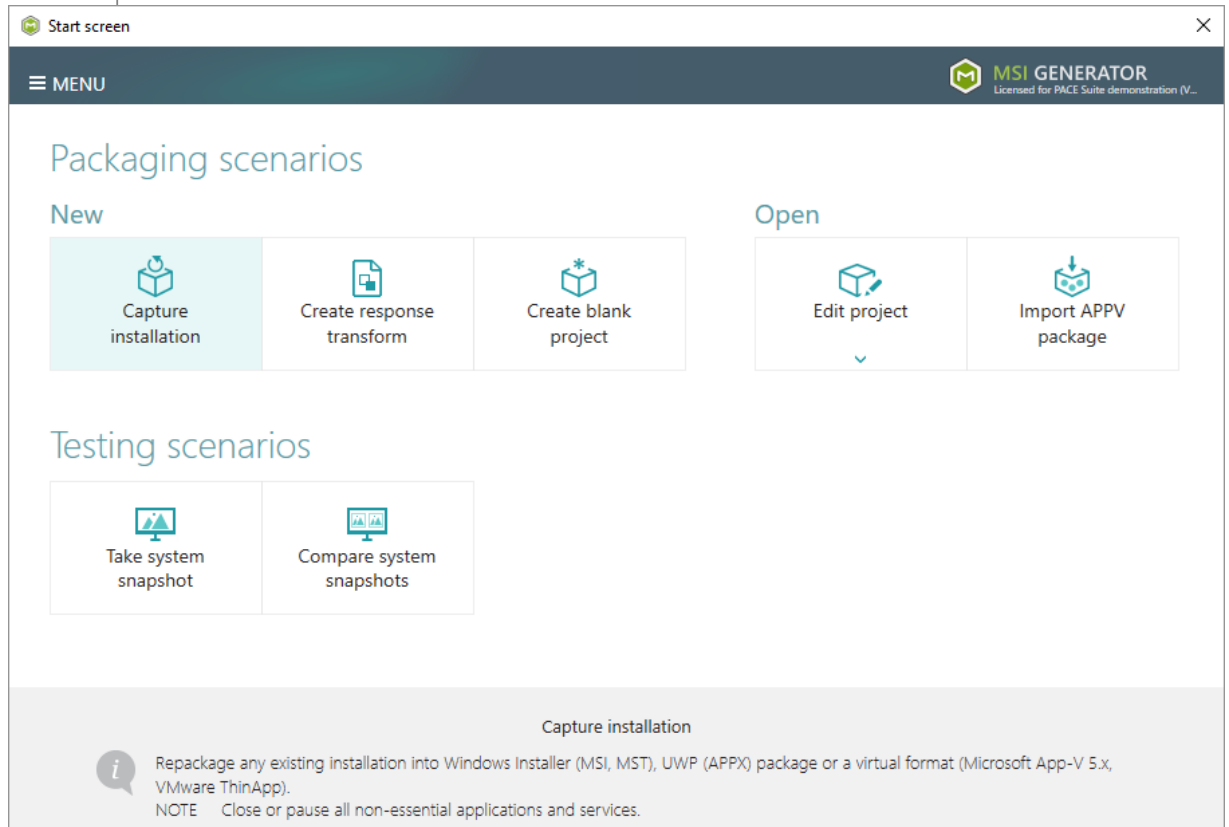
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



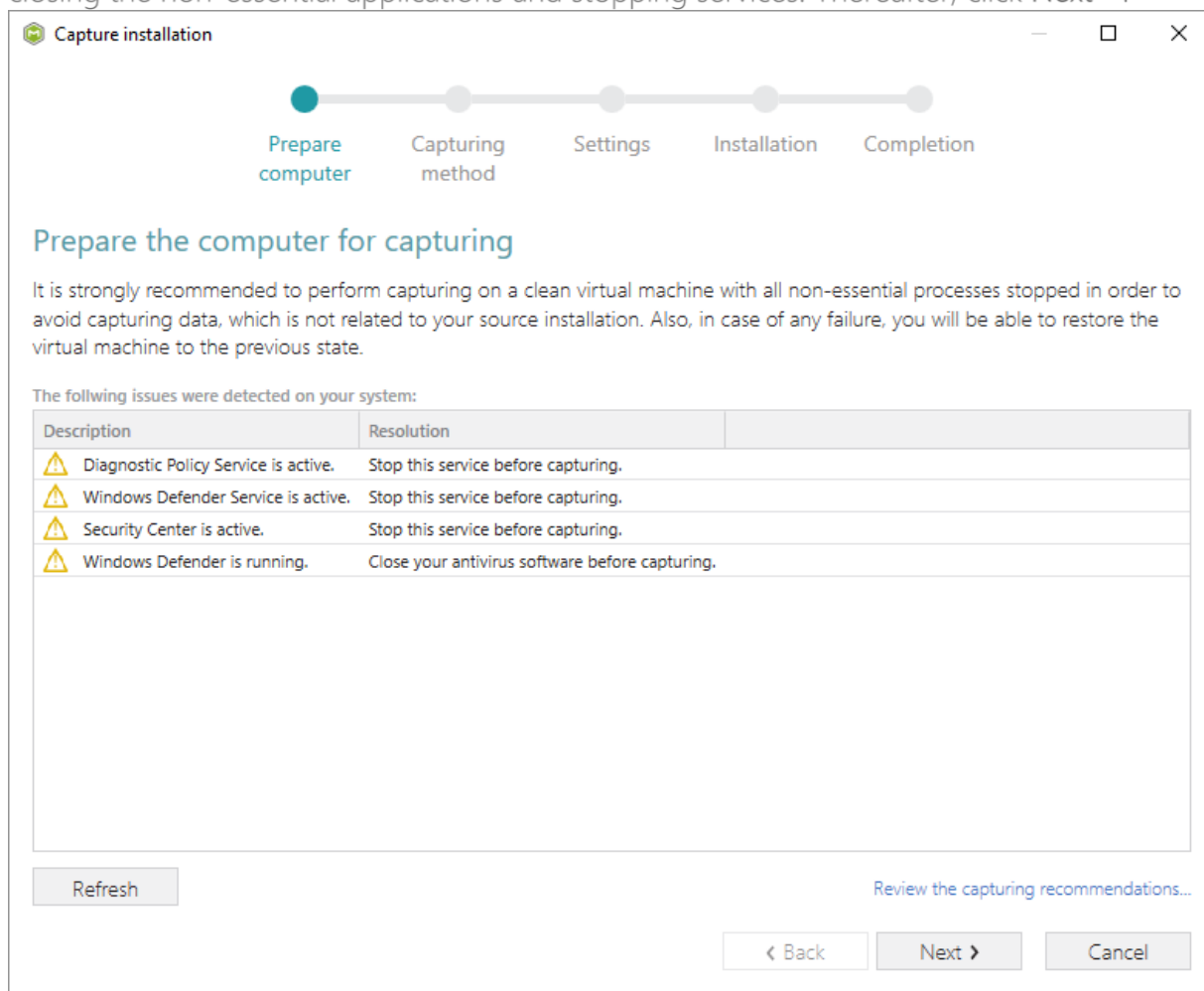
- [2]. If you have User Account Control enabled, click Yes in the opened window.



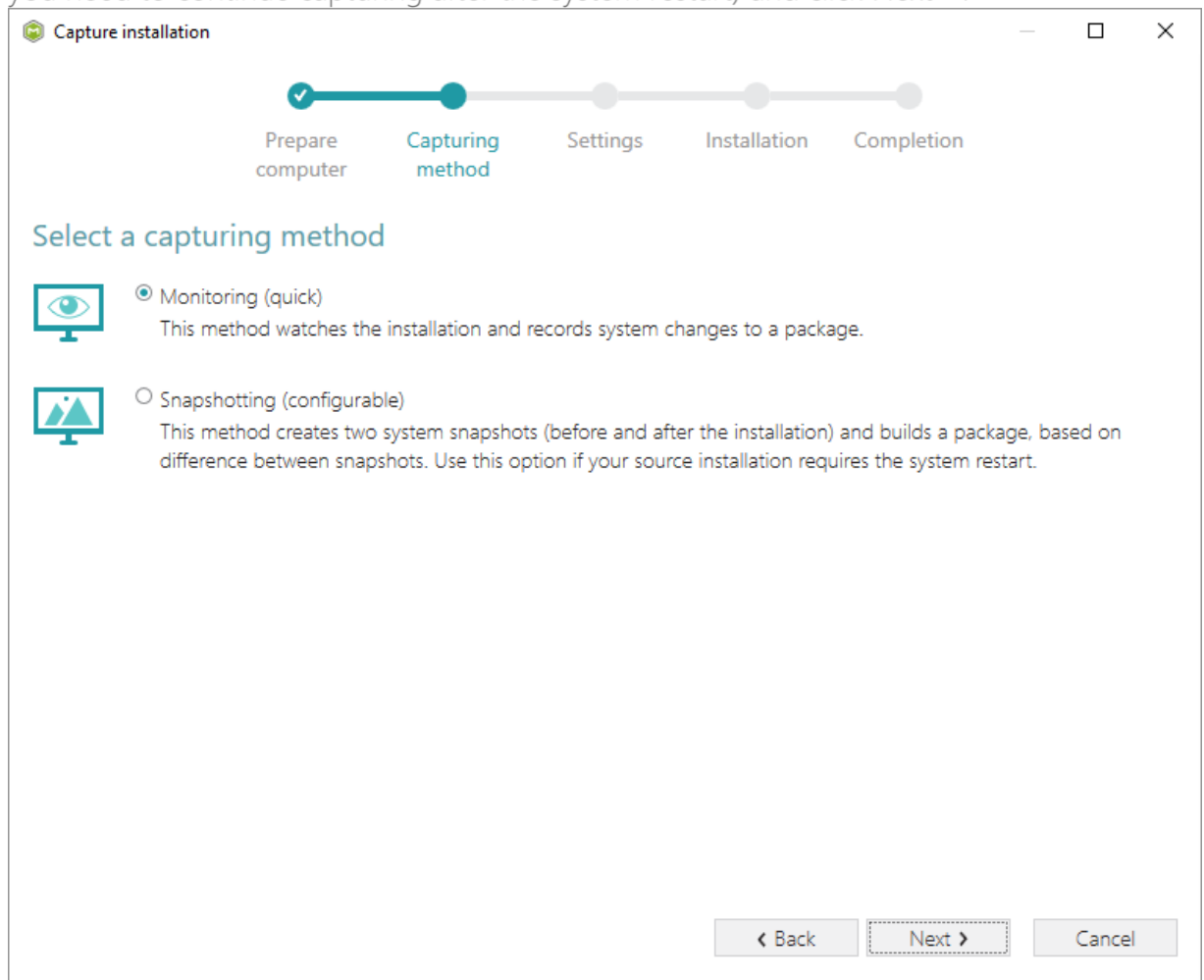
[3]. Click Capture installation.



- [4]. Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- [5]. Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- [6]. Here you can review and update package name, disable needless exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

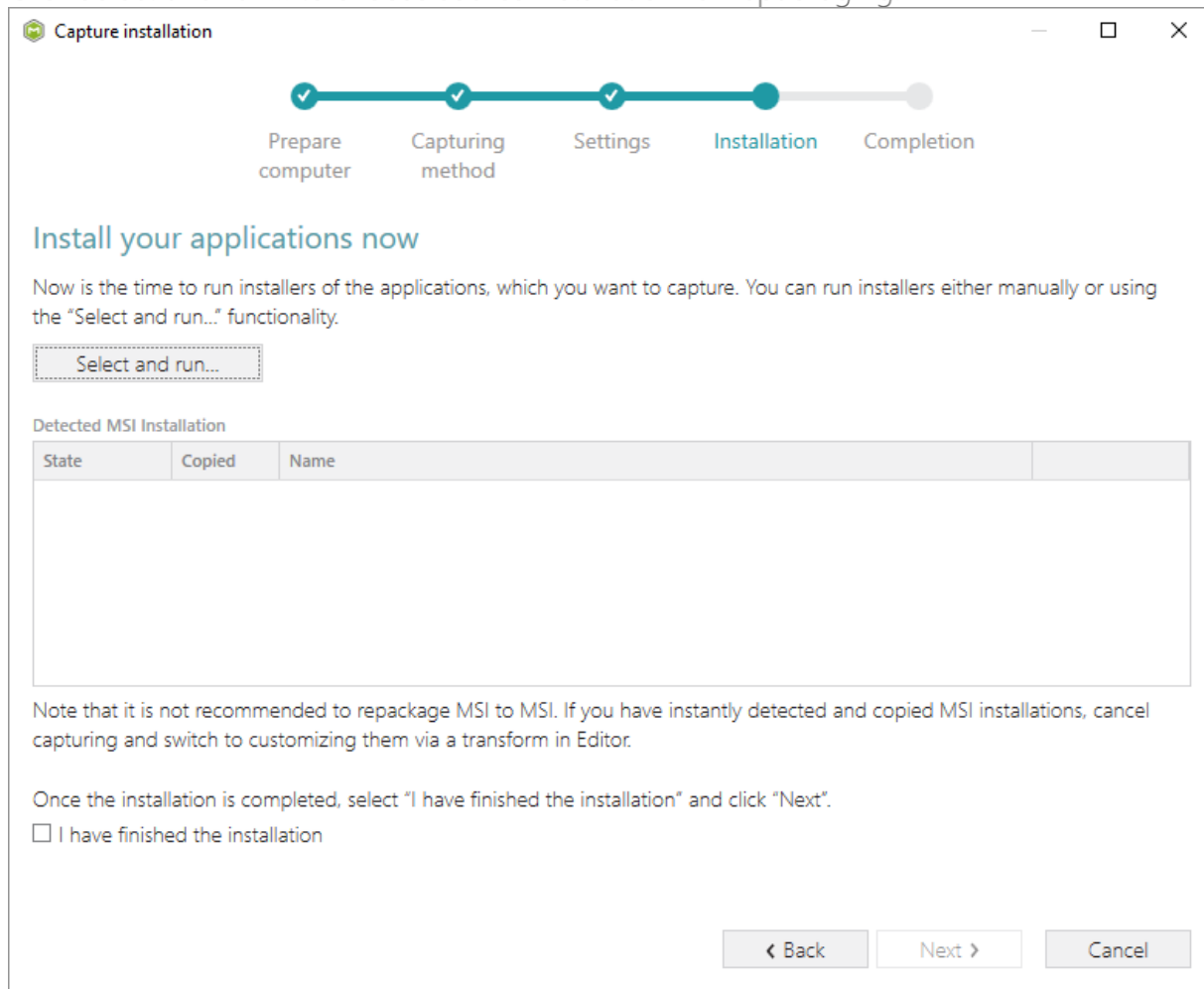
Scanning areas

Application objects:

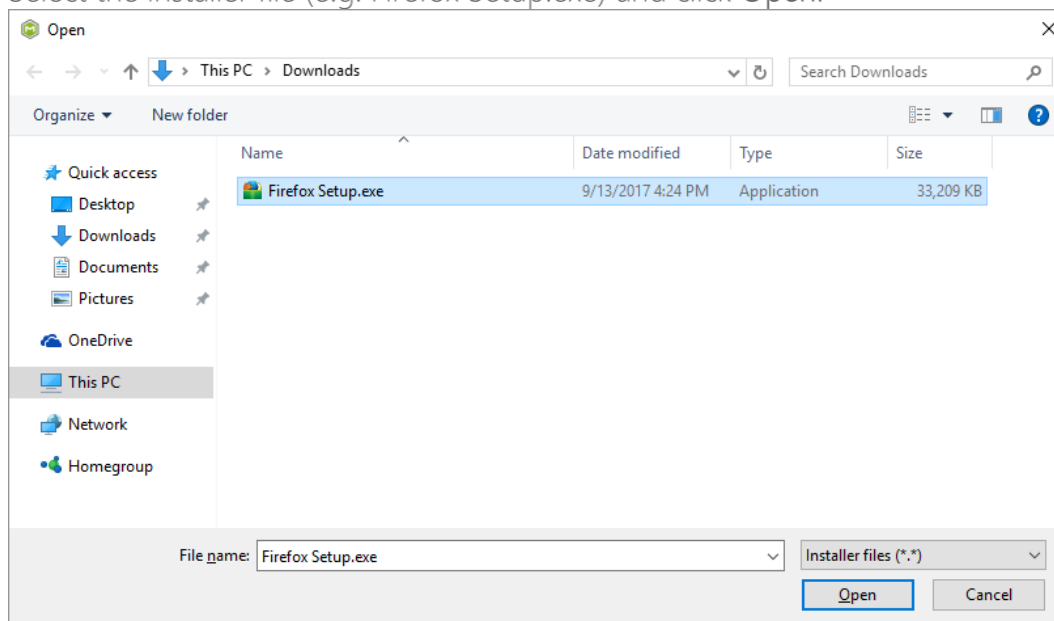
- ☒ Permissions
- ☒ Services
- ☒ Printers

< Back **Next >** Cancel

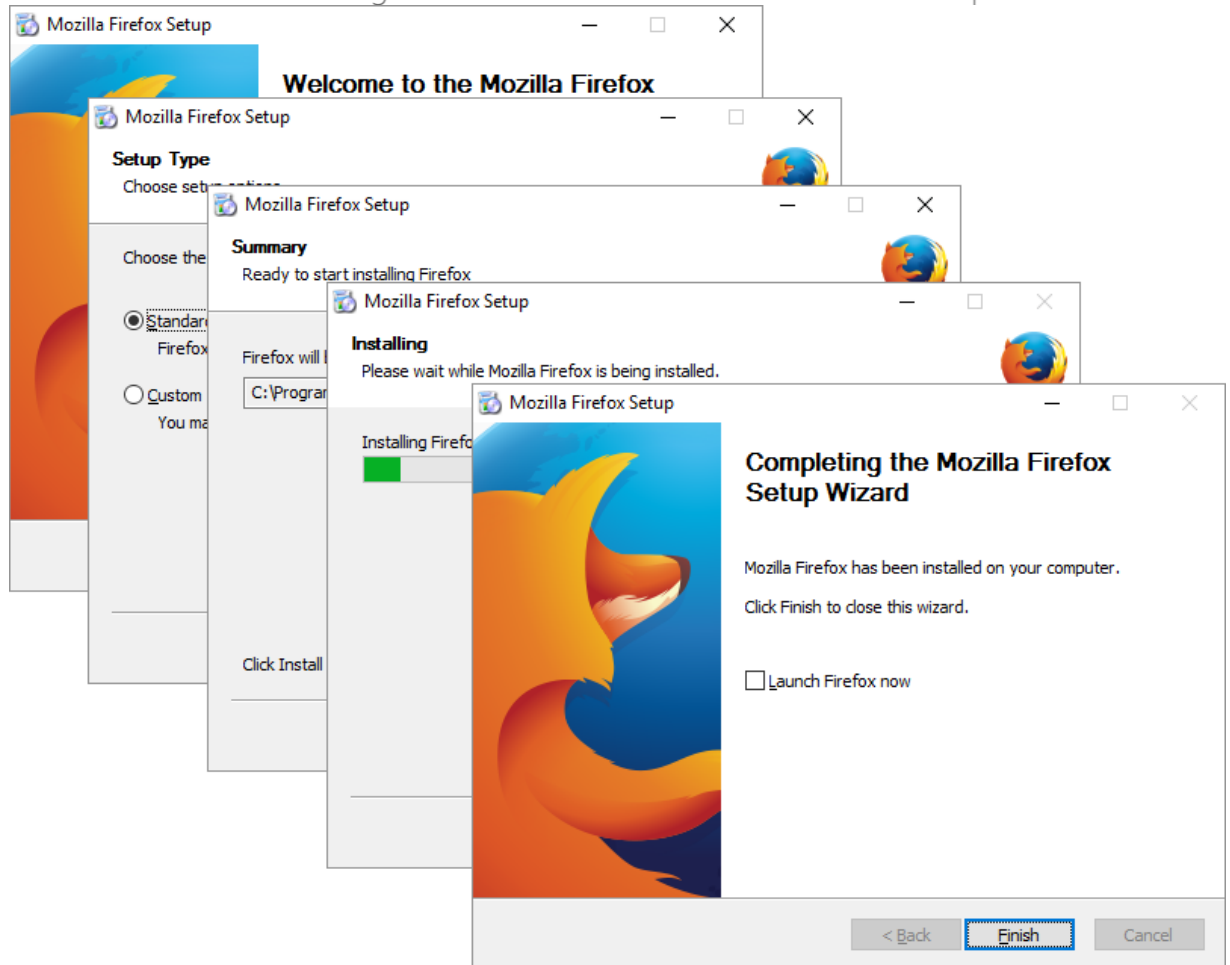
- [7]. Click **Select and run...** to choose source installation for repackaging.



- [8]. Select the installer file (e.g. Firefox Setup.exe) and click **Open**.

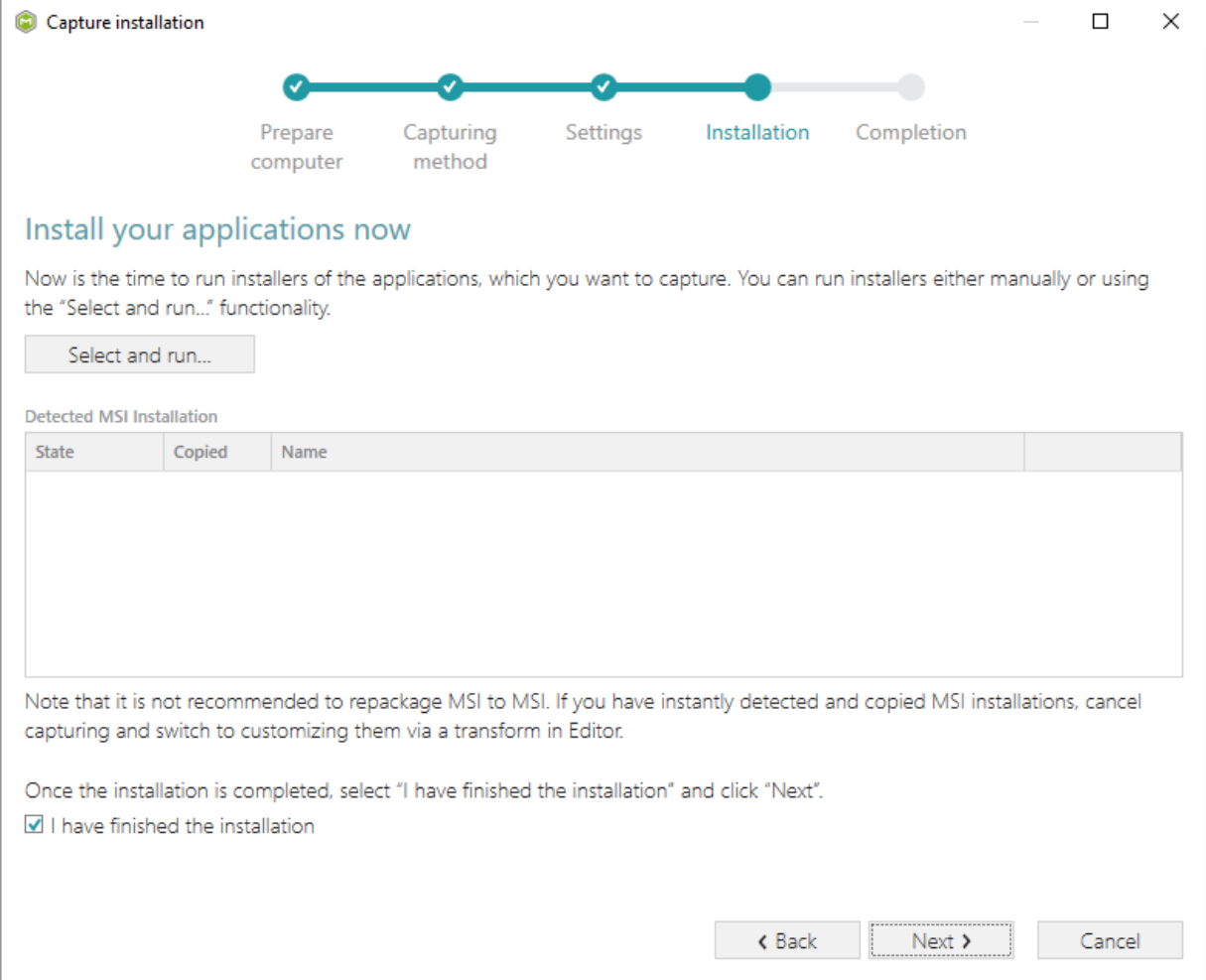


- [9]. Follow the installation dialogs of the launched source installation to complete it.



- [10]. Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.

[11]. Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

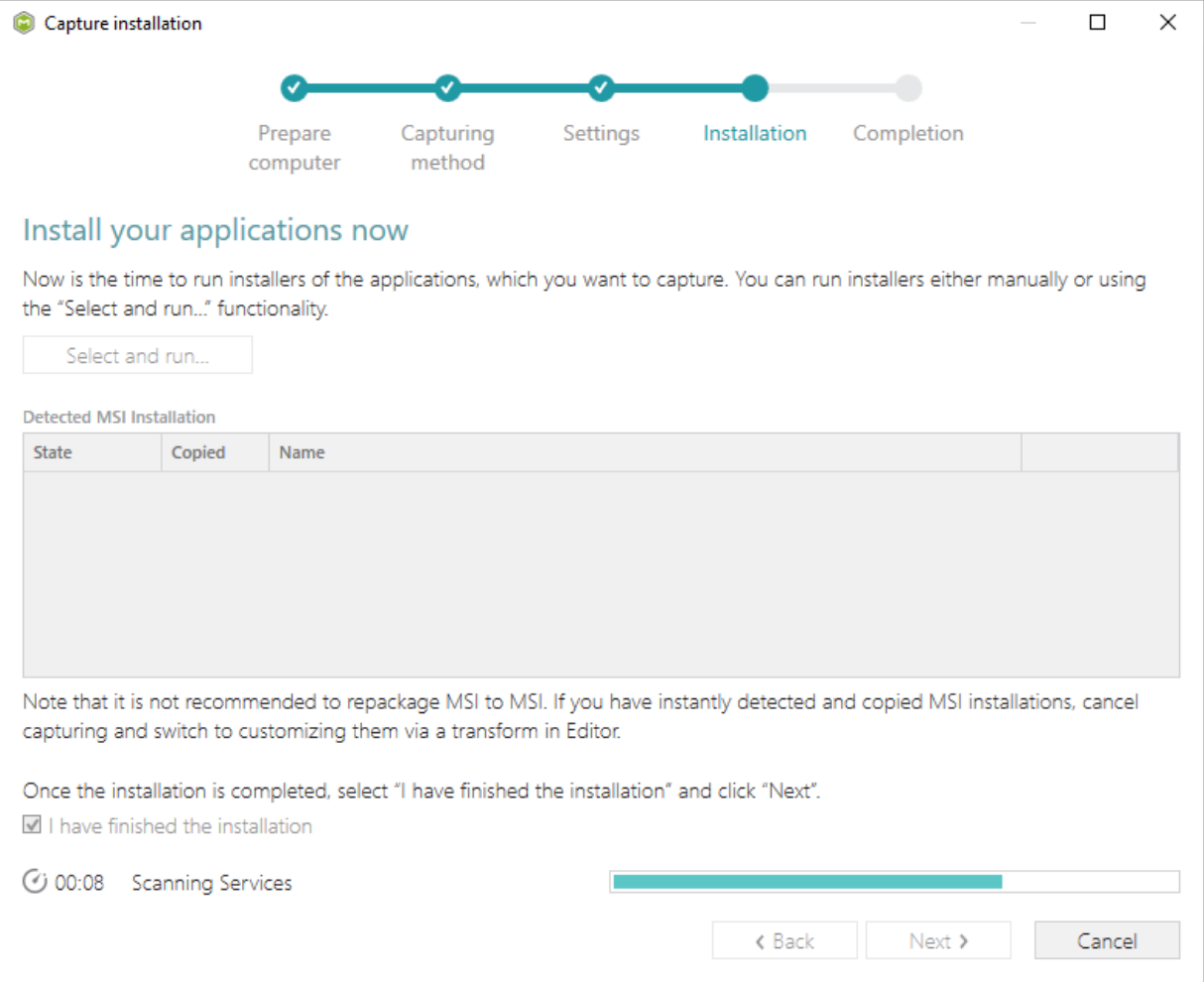
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back Next > Cancel

- [12]. Wait a little, while the capturing process is finishing, filtering captured data and creating the project.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

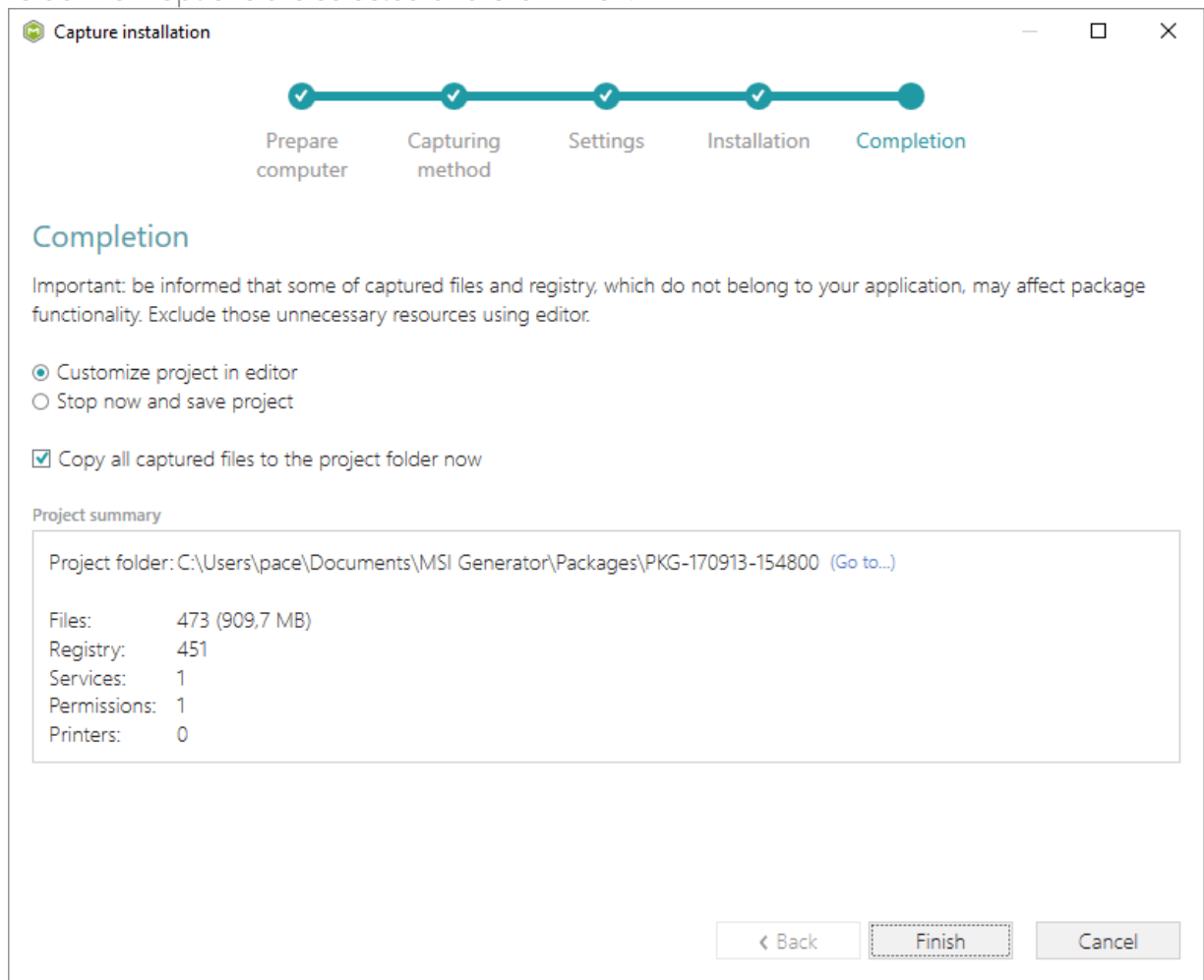
Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

00:08 Scanning Services

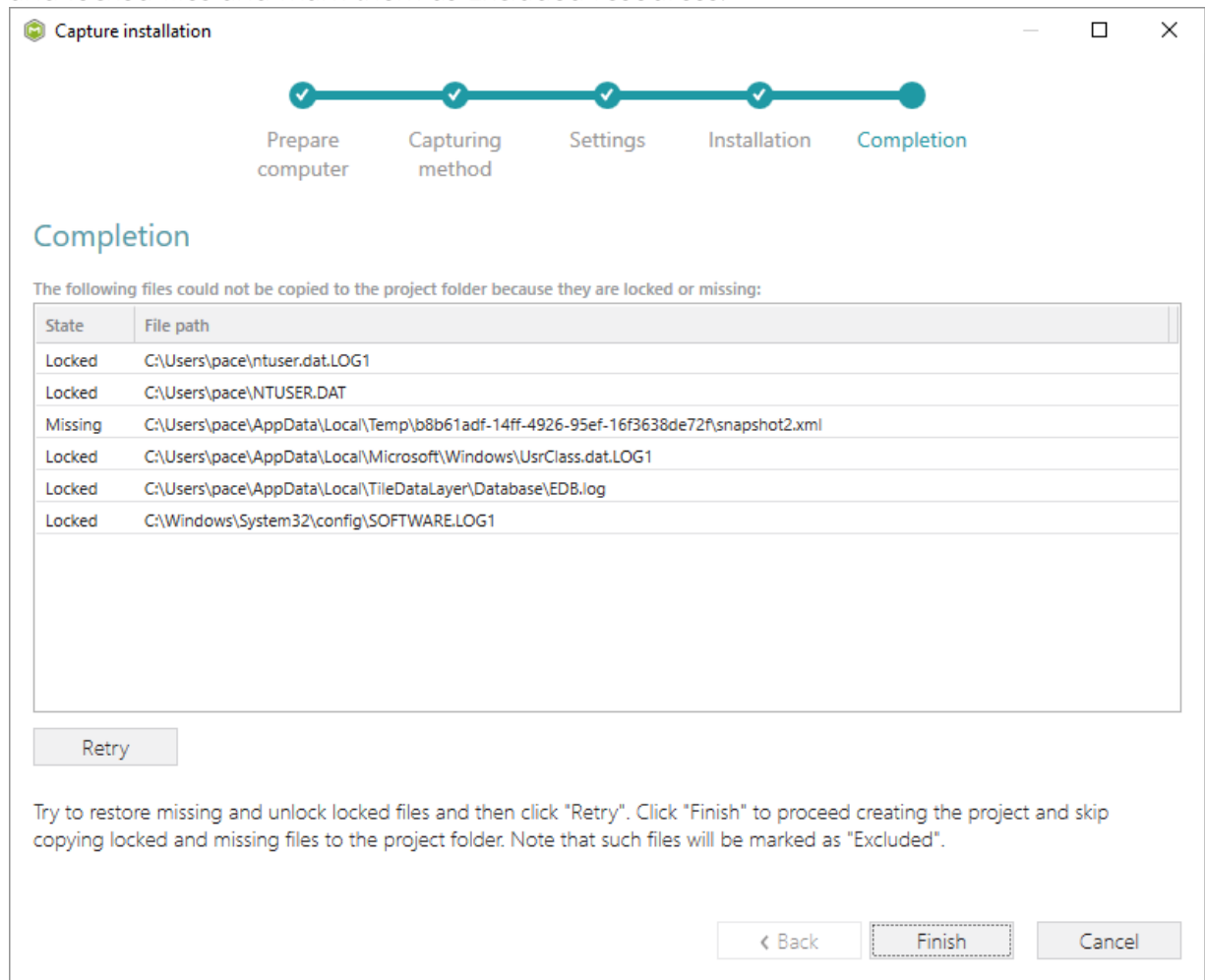
< Back Next > Cancel

- [13]. Leave selected the Customize project in editor and Copy all captured files to the project folder now options are selected and click Finish.



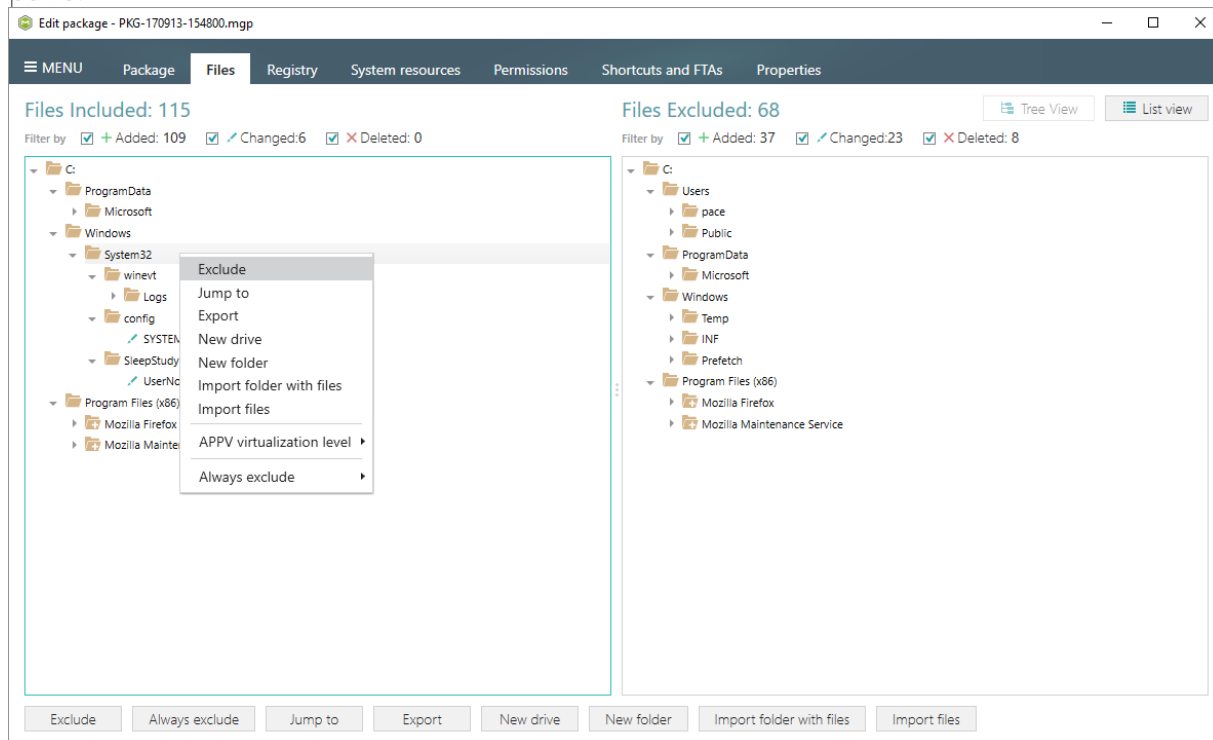
- [14]. The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing

and locked files and mark them as Excluded resources.

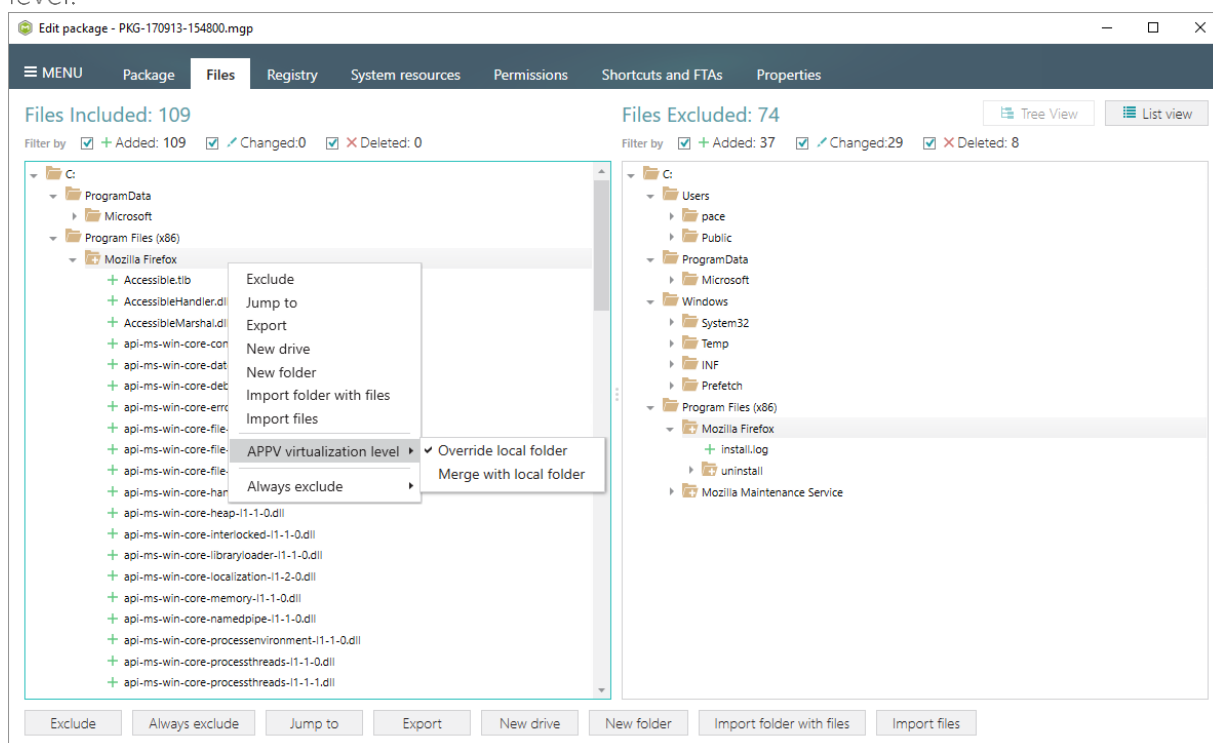


- [15]. Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).
- [16]. In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included'

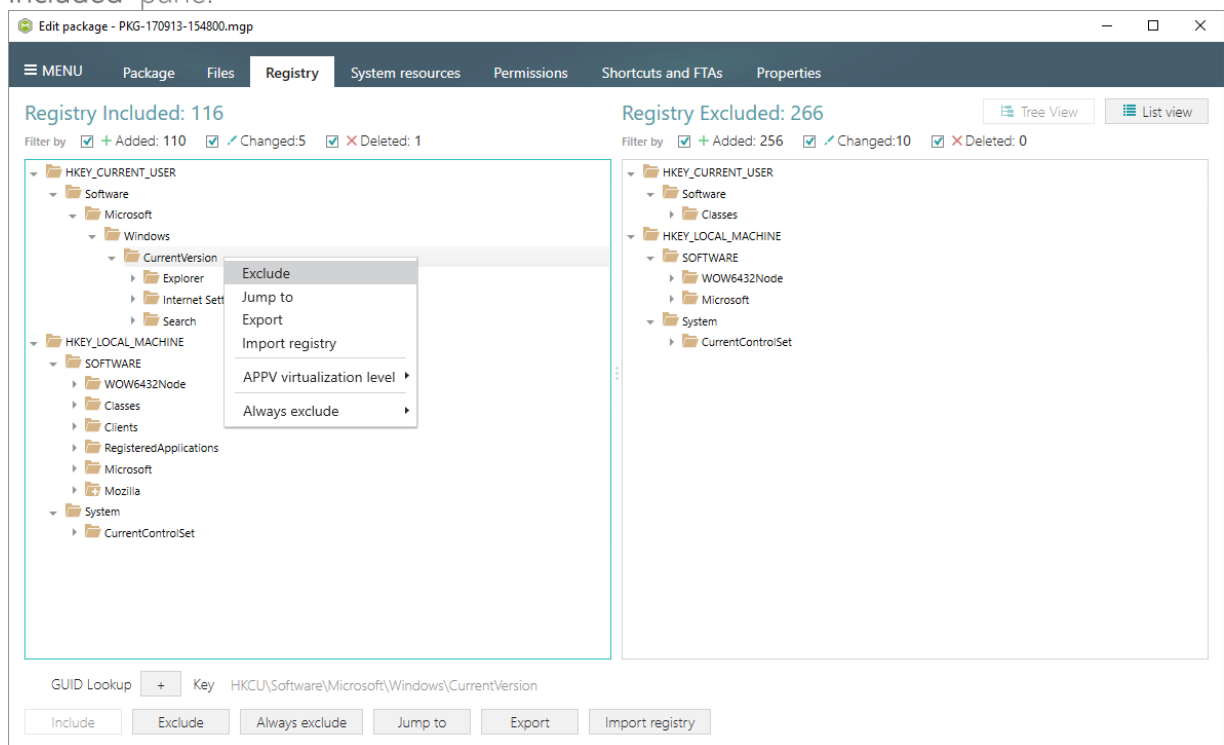
pane.



- [17]. In order to change the default virtualization (isolation) level of a folder, open the folder context menu, and select either **Override local folder** or **Merge with local folder** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local folder** option selected, it means that this option is inherited from the parent folder. Child folder could not have the **Merge with local folder** virtualization level, if parent one has the **Override local folder** virtualization level.

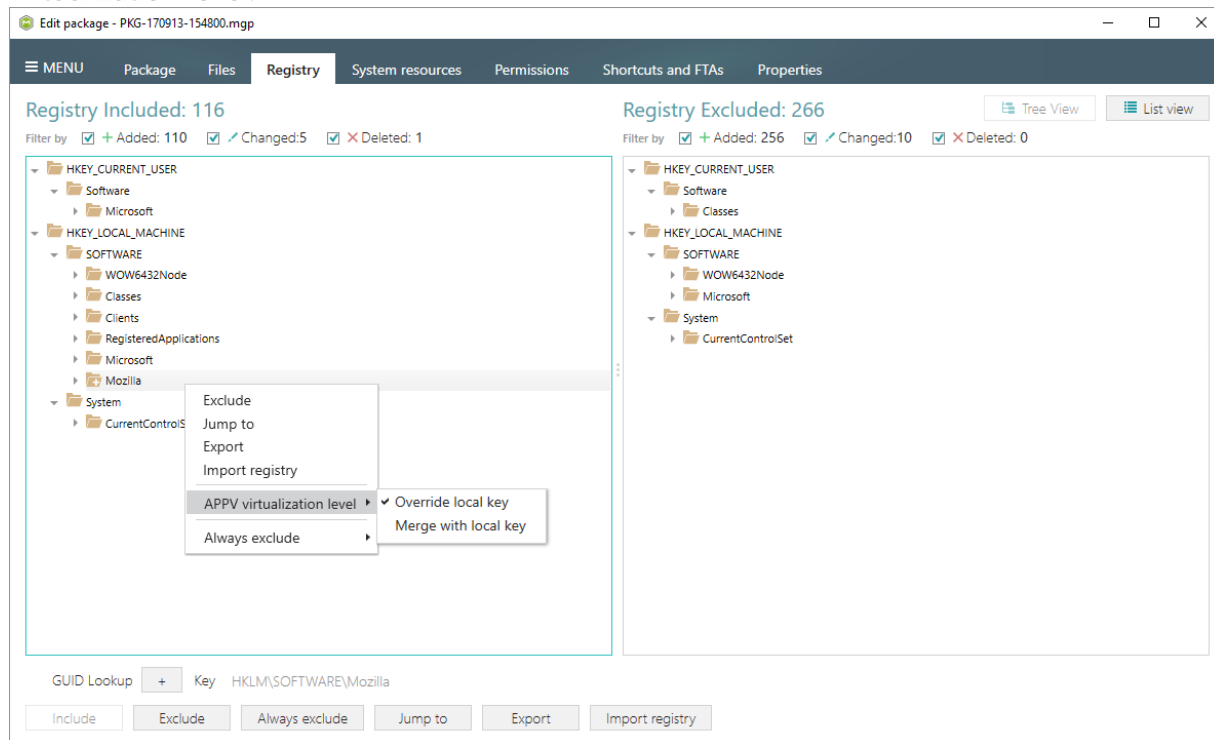


- [18]. In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

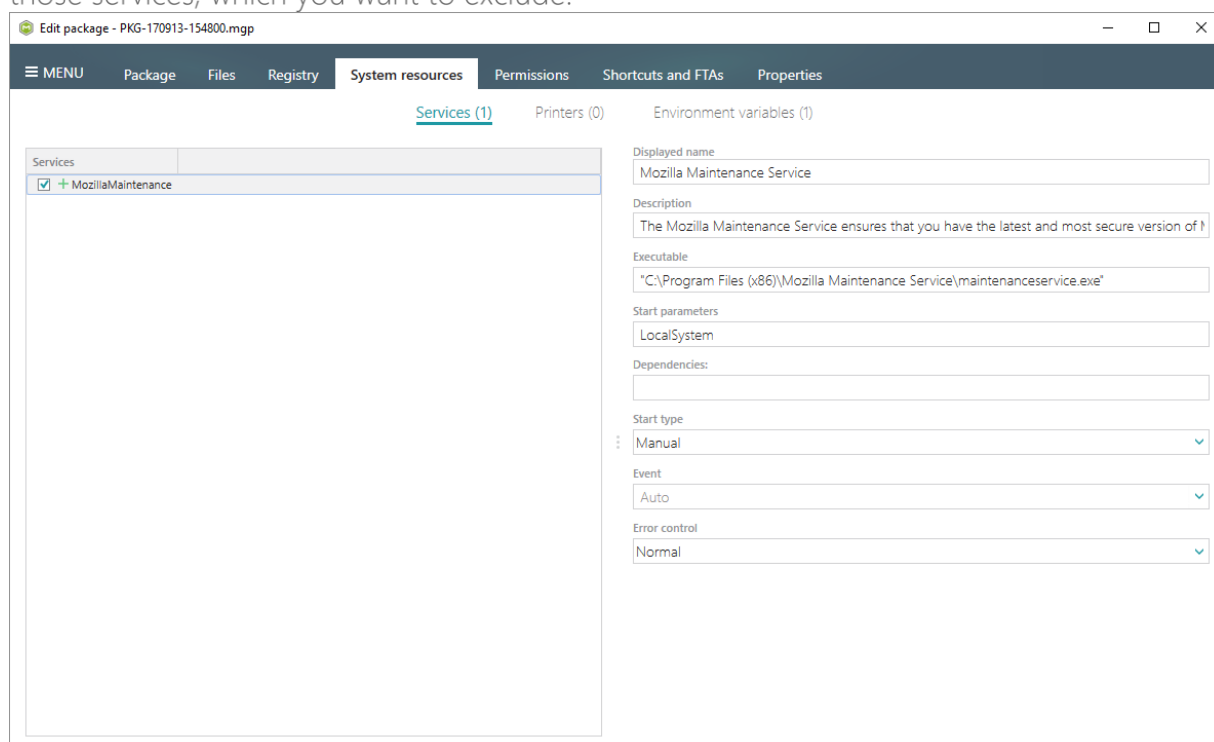


- [19]. In order to change the default virtualization (isolation) level of a registry key, open the registry key context menu, and select either **Override local key** or **Merge with local key** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local key** option selected, it means that this option is inherited from the parent registry key. A child registry key could not have the **Merge with local key** virtualization level, if the parent one has the **Override local key**

virtualization level.



[20]. In order to review and exclude unnecessary services, go to the System resources -> Services tab, and uncheck the checkbox, located before the service name in the list, for those services, which you want to exclude.



[21]. In order to review and exclude unnecessary APPV applications, shortcuts and their file type associations, go to the Shortcuts and FTAs -> APPV apps and FTAs tab, and

uncheck checkboxes, located before those items names, which you want to exclude.

Application

Application
<input checked="" type="checkbox"/> firefox

New application...

Application

Name: firefox

Version: 55.0.3

Application path: C:\Program Files (x86)\Mozilla Firefox\firefox.exe Browse...

Shortcuts

	Name	Folder
<input type="checkbox"/>	Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/>	Mozilla Firefox	C:\ProgramData\Microsoft\Win

Exclude New... Edit...

File Type Association

Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

[22]. If you need to add a new APPV application, its shortcuts and associate file extensions with this application, click **New application...** on the **Shortcuts and FTAs -> APPV apps and FTAs** tab.

Application

Application
<input checked="" type="checkbox"/> firefox

New application...

Application

Name: firefox

Version: 55.0.3

Application path: C:\Program Files (x86)\Mozilla Firefox\firefox.exe Browse...

Shortcuts

	Name	Folder
<input type="checkbox"/>	Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/>	Mozilla Firefox	C:\ProgramData\Microsoft\Win

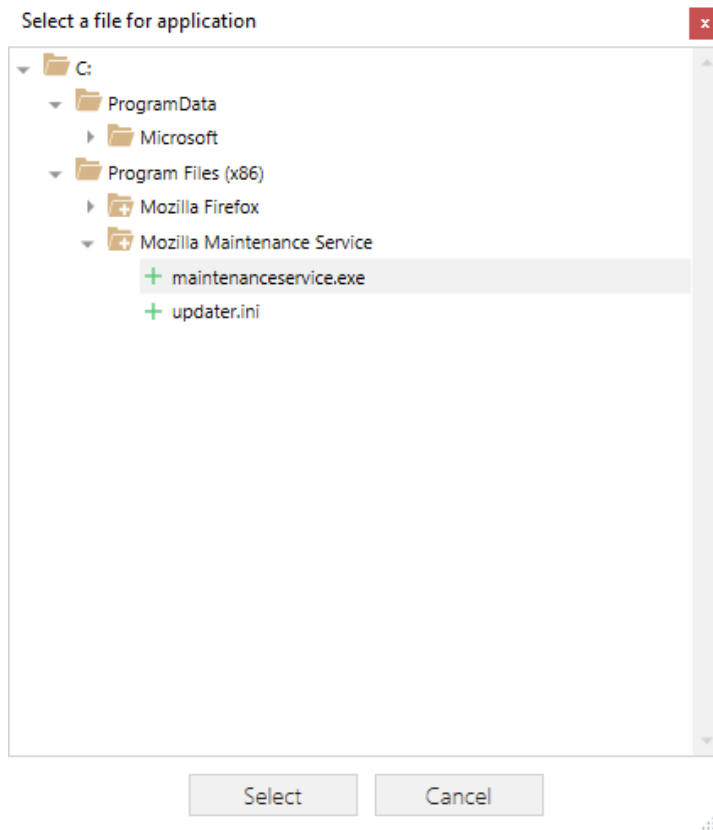
Exclude New... Edit...

File Type Association

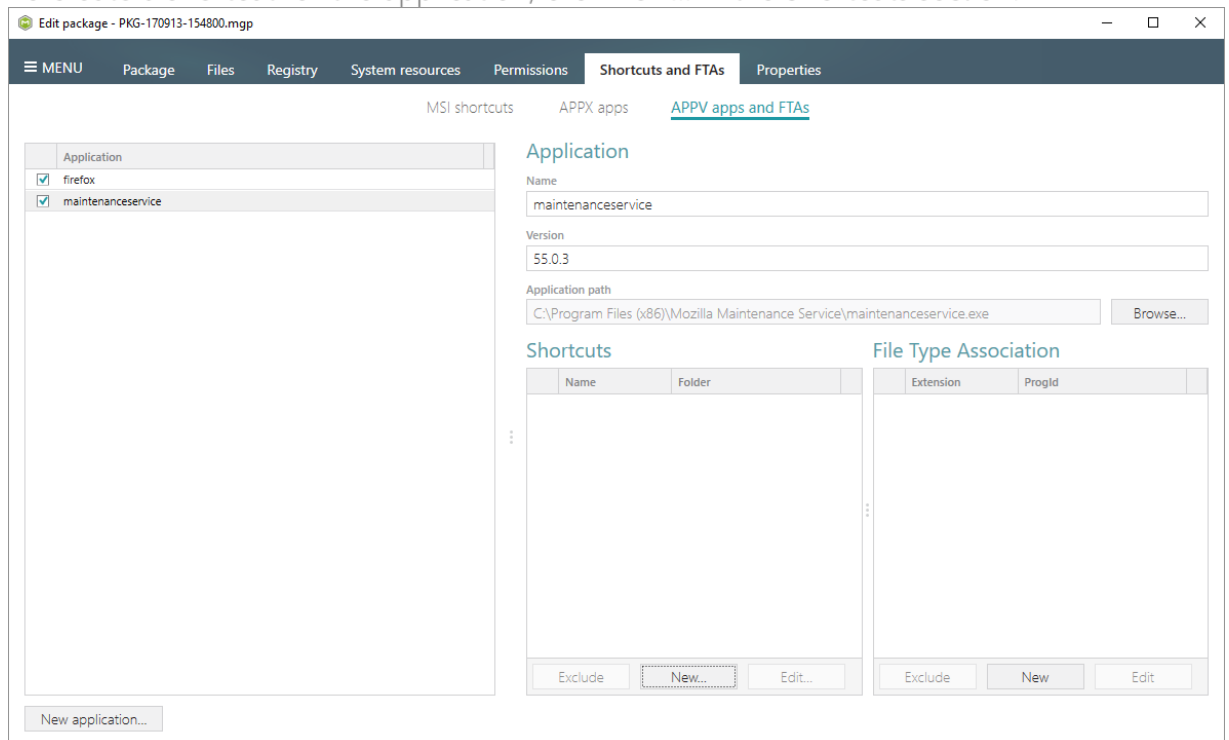
Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

[23]. Select the executable file (EXE) from the tree and click **Select**.



[24]. To create a shortcut for the application, click **New...** in the Shortcuts section.



[25]. Enter a shortcut name, select a destination location ("Folder" field), icon and click Save.

Shortcut

Name
Mozilla Maintenance Service

Folder
C:\ProgramData\Microsoft\Windows\Start Menu\Programs

Arguments

Start in
C:\Program Files (x86)\Mozilla Maintenance Service

Run
Normal

Icon
Change icon

Save Cancel

[26]. To associate some file extension with your application, click **New...** in the File Type Association section.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions **Shortcuts and FTAs** Properties

MSI shortcuts APPX apps APPV apps and FTAs

Application

Application
<input checked="" type="checkbox"/> firefox
<input checked="" type="checkbox"/> maintenanceservice

Name
maintenanceservice

Version
55.0.3

Application path
C:\Program Files (x86)\Mozilla Maintenance Service\maintenanceservice.exe Browse...

Shortcuts

Name	Folder
<input checked="" type="checkbox"/> Mozilla Maintenance	C:\ProgramData\Microsoft\Win...

Exclude New... Edit...

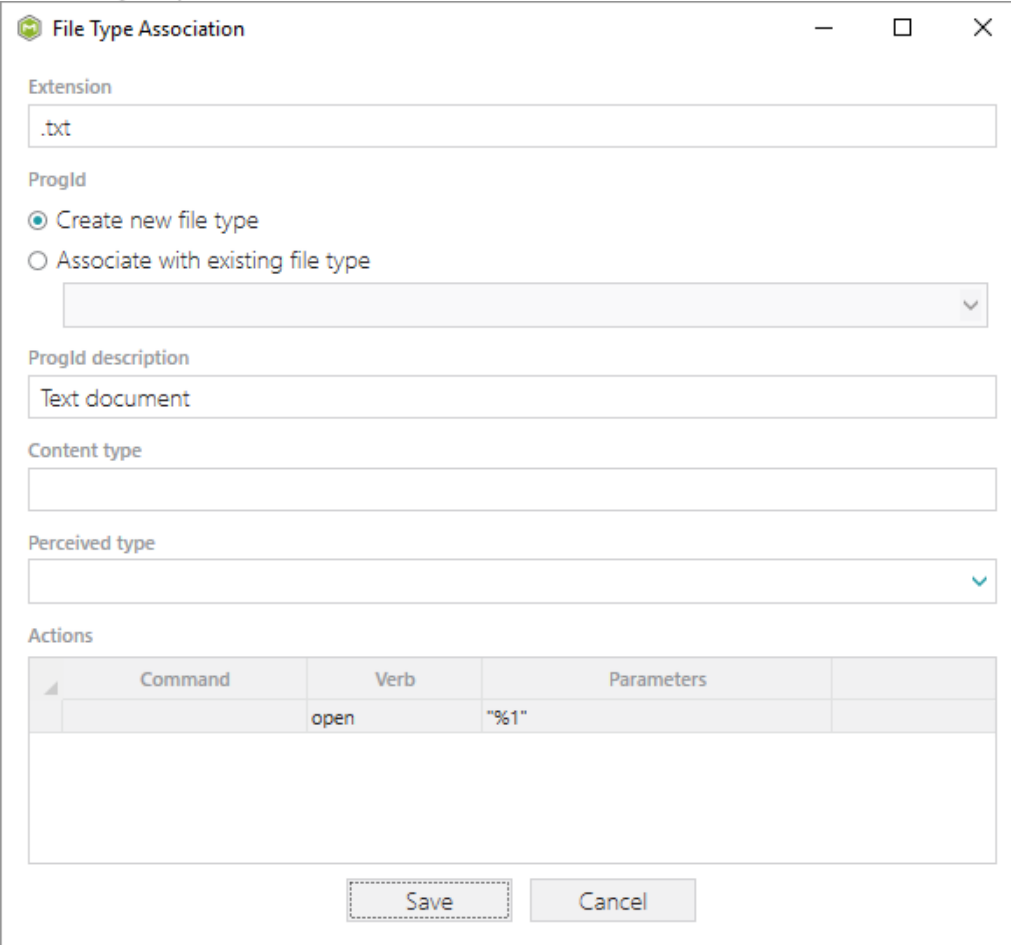
File Type Association

Extension	ProgId
-----------	--------

Exclude **New** Edit

New application...

- [27]. Enter a file extension and click **Save**. Optionally you can modify other FTA settings according to your needs.



File Type Association

Extension

ProgId
☒ Create new file type
☐ Associate with existing file type

ProgId description

Content type

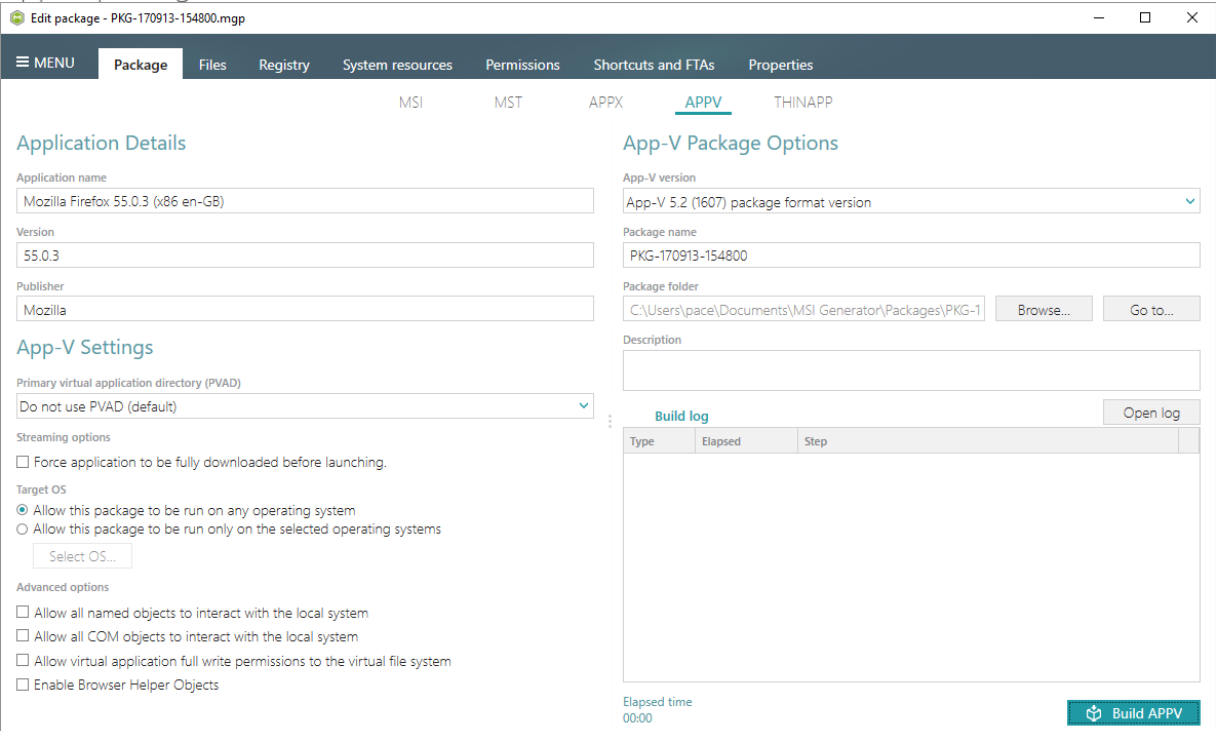
Perceived type

Actions

Command	Verb	Parameters
	open	"%1"

Save **Cancel**

- [28]. Finally, to build APPV package from the project, navigate to the **Package -> APPV** tab, review and update (if necessary) **Application Details**, select the necessary **App-V Settings**, **App-V** package format version, and then click **Build APPV**.



Edit package - PKG-170913-154800.mgp

MENU **Package** **Files** **Registry** **System resources** **Permissions** **Shortcuts and FTAs** **Properties**

MSI **MST** **APPX** **APPV** **THINAPP**

Application Details

Application name

Version

Publisher

App-V Settings

Primary virtual application directory (PVAD)

Streaming options
☐ Force application to be fully downloaded before launching.

Target OS
☒ Allow this package to be run on any operating system
☐ Allow this package to be run only on the selected operating systems

Advanced options
☐ Allow all named objects to interact with the local system
☐ Allow all COM objects to interact with the local system
☐ Allow virtual application full write permissions to the virtual file system
☐ Enable Browser Helper Objects

App-V Package Options

App-V version

Package name

Package folder

Description

Build log

Type	Elapsed	Step
------	---------	------

Elapsed time
00:00

- [29]. Click **Go to...**, located next to the **Project folder** field, to open the package containing folder in Windows Explorer.

Edit package - PKG-170913-154800.mgp

MENU **Package** Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Version: 55.0.3

Publisher: Mozilla

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: PKG-170913-154800

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 **Browse...** **Go to...**

Description:

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

☐ Force application to be fully downloaded before launching.

Target OS:

☒ Allow this package to be run on any operating system

☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

☐ Allow all named objects to interact with the local system

☐ Allow all COM objects to interact with the local system

☐ Allow virtual application full write permissions to the virtual file system

☐ Enable Browser Helper Objects

Build log

Open log

Type	Elapsed	Step
	00:00:37	Operation was completed successfully
	00:00:18	Saving package
	00:00:18	Processing software clients
	00:00:18	Processing environment variables
	00:00:18	Processing URL protocols
	00:00:18	Processing application capabilities
	00:00:18	Processing FTAs
	00:00:18	Processing browser plugins
	00:00:18	Processing COM objects
	00:00:18	Processing services
	00:00:18	Processing registry

Elapsed time: 00:00:38

Build APPV

3.6 New THINAPP

NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed.

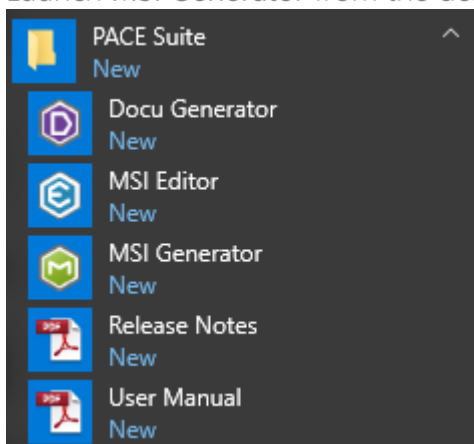
Choose a scenario that better suits your needs:

- **Create THINAPP from Scratch**, described in section 3.6.1
Create a new empty project in MSI Generator, add folders, files, registry entries, select entry points and then generate the THINAPP package from this project.
- **Convert (Repackage) EXE, MSI to THINAPP**, described in section 3.6.2
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into THINAPP package using MSI Generator.

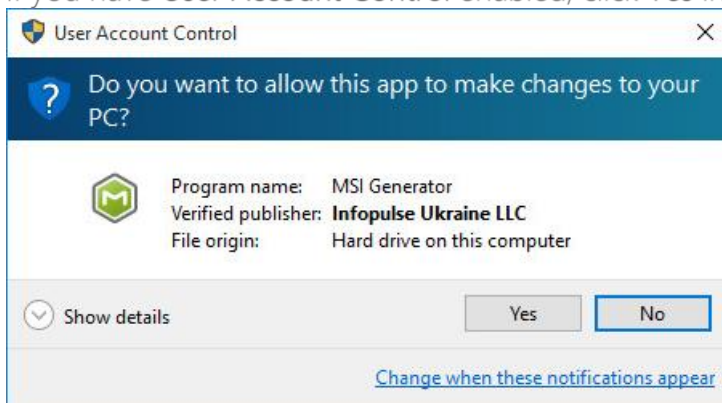
3.6.1 Create THINAPP from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries, select entry points and then generate the THINAPP package from this project.

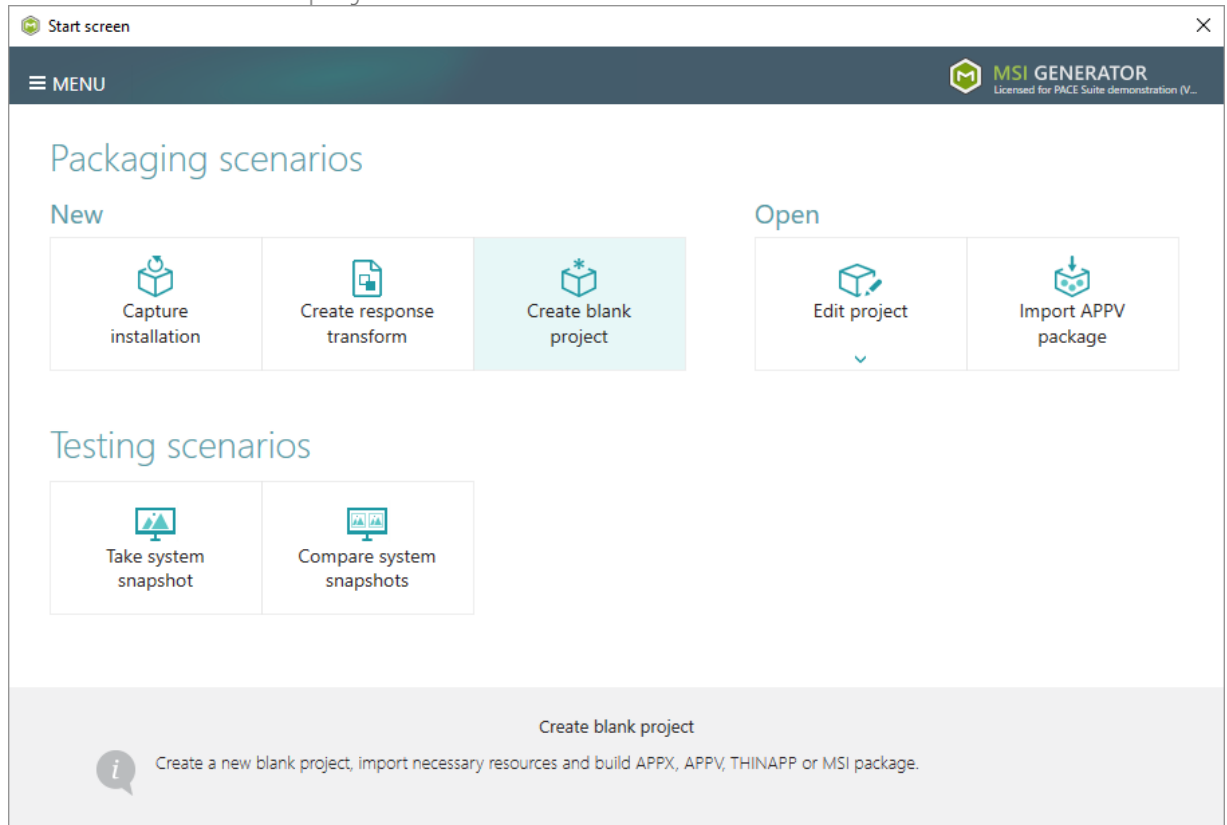
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



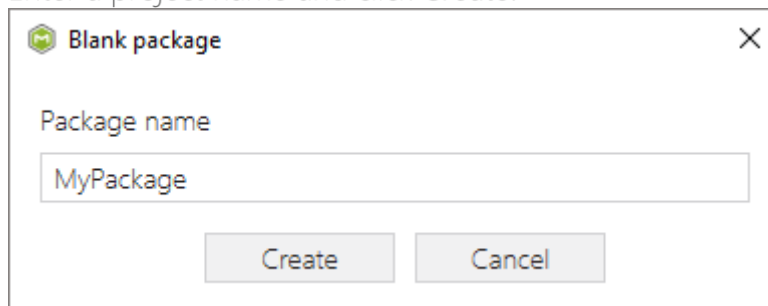
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click the Create blank project.

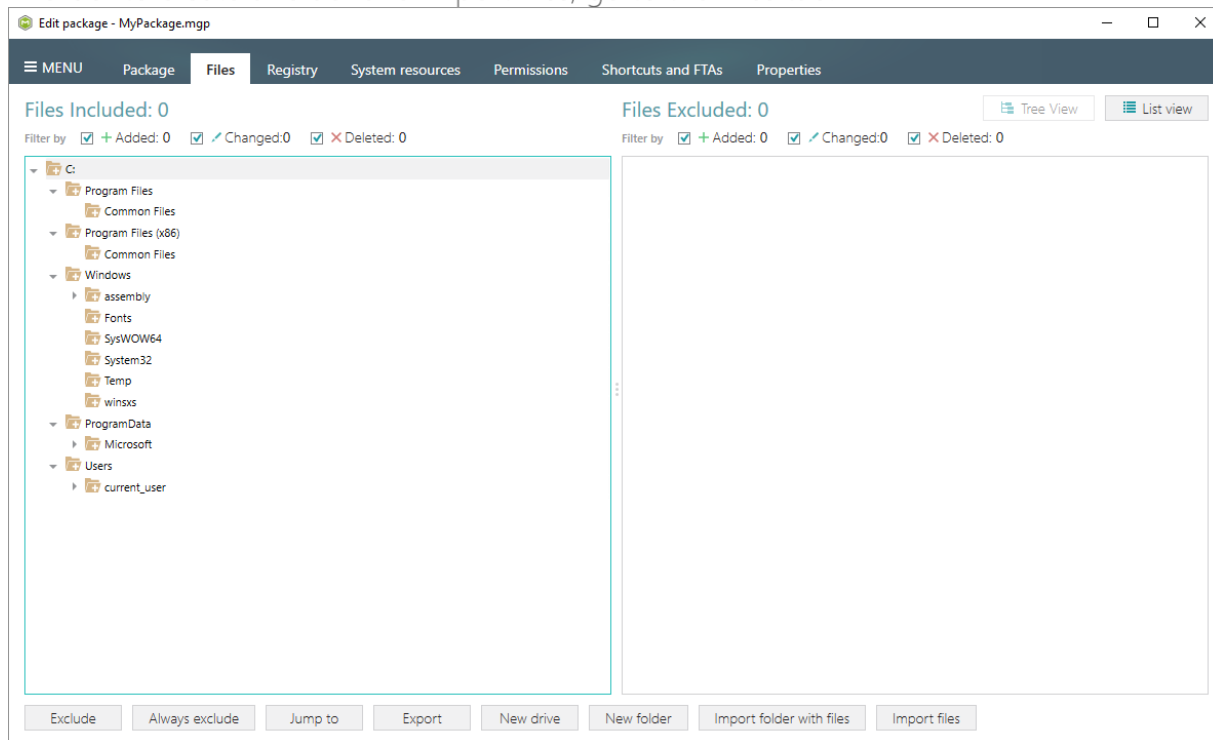


- [4]. Enter a project name and click Create.

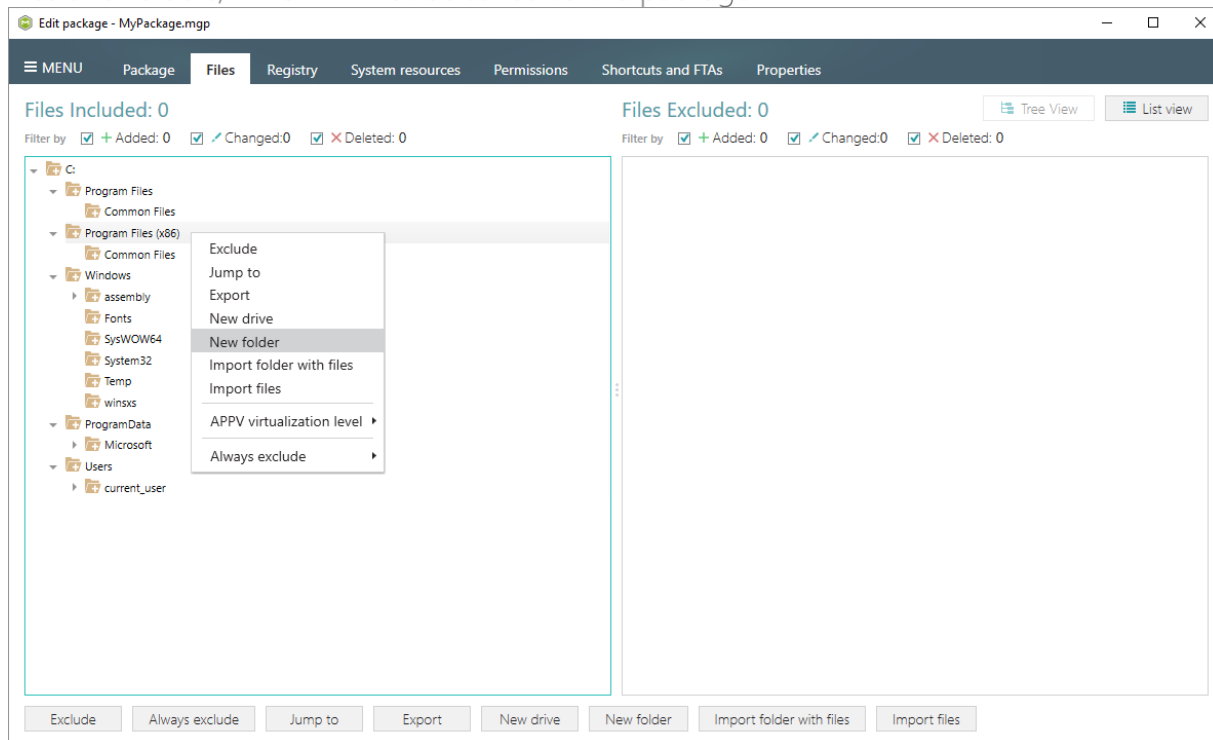


- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [10] describe how to create a new folder and import files to this folder; the steps from [11] to [13] describe how to import registry entries from the REG file; and the steps [14] and [15] describe how to select entry points and build THINAPP package from the prepared project.

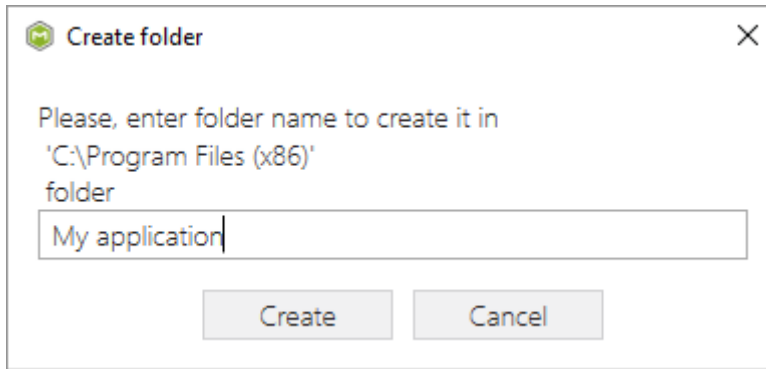
- [6]. In order to create a folder and import files, go to the Files tab.



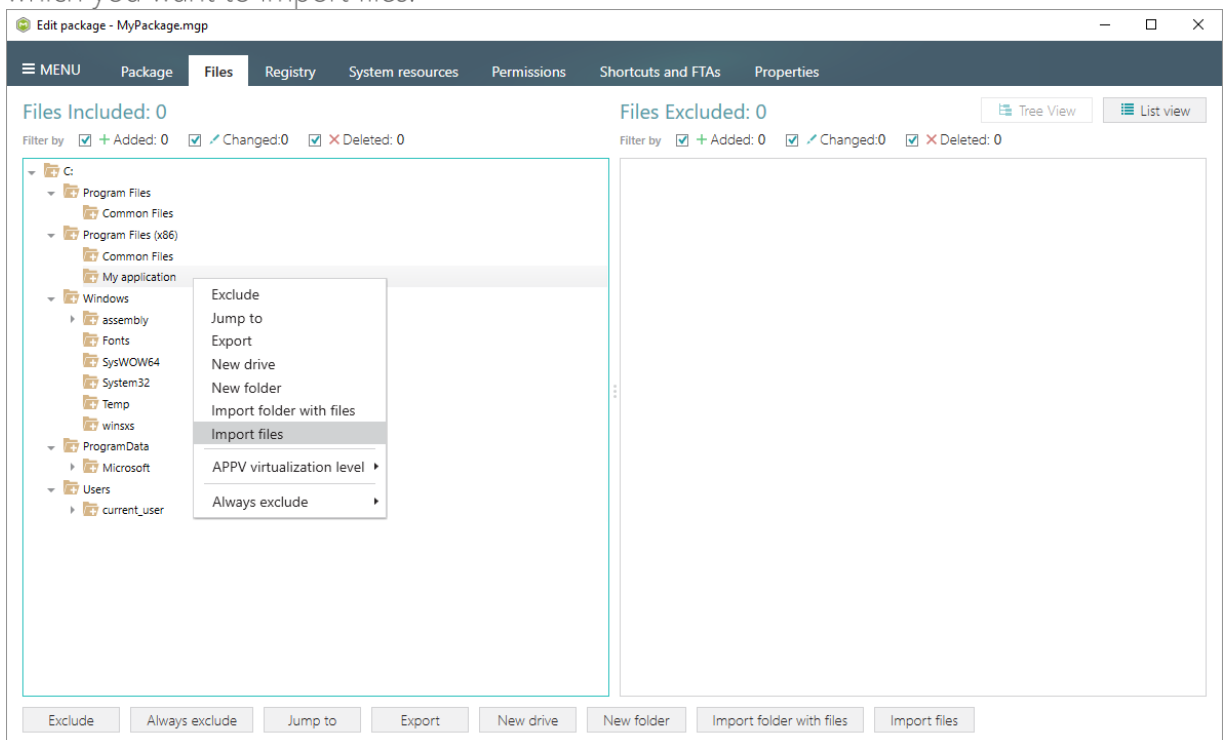
- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



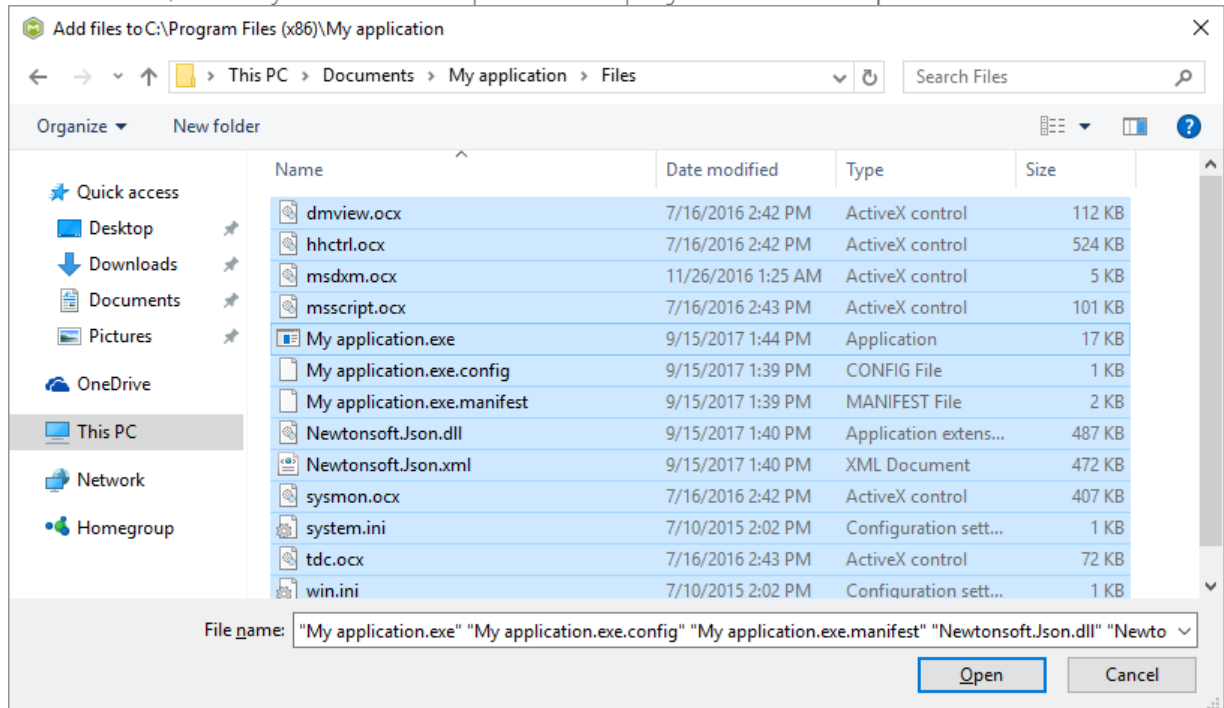
- [8]. Enter a folder name and click Create.



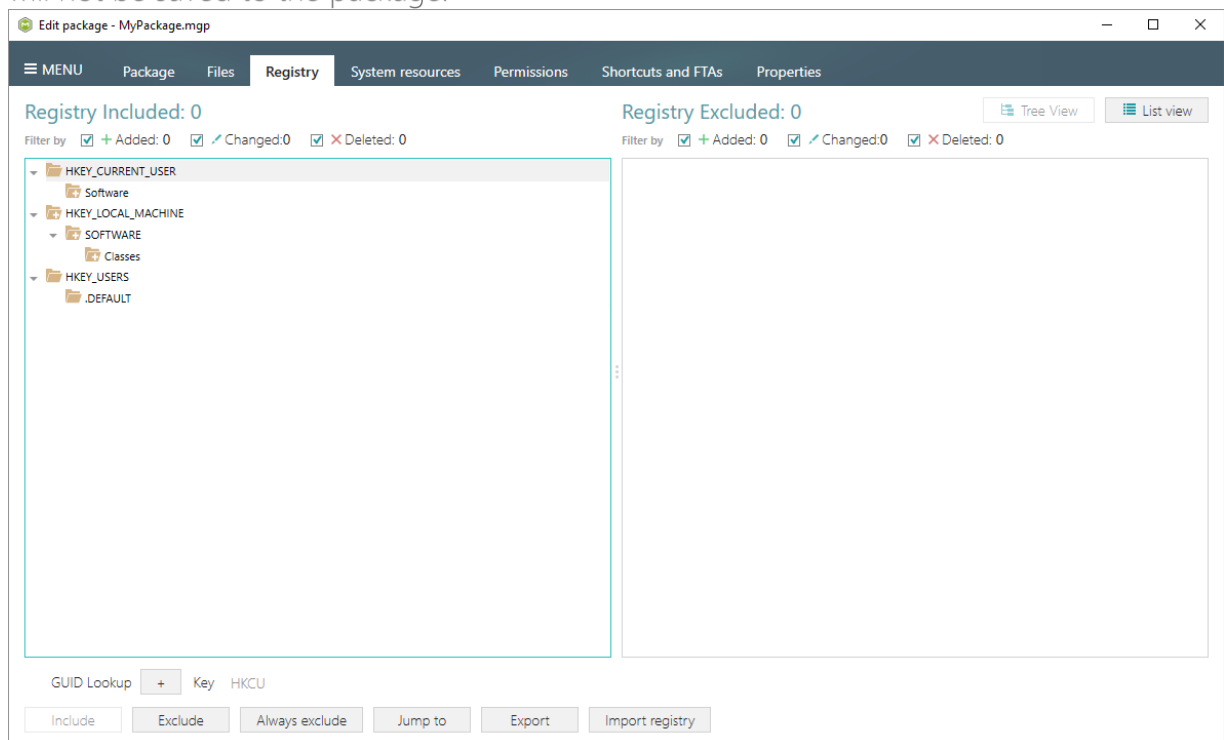
- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



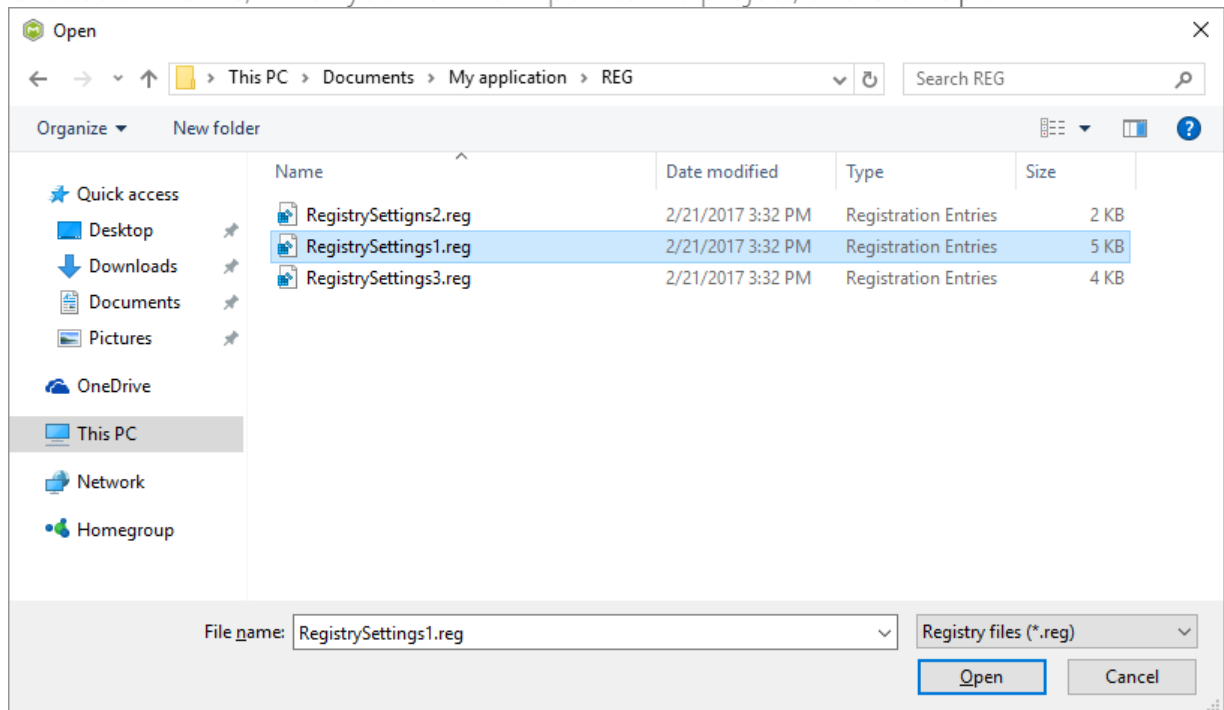
[10]. Choose files, which you want to import to the project and click Open.



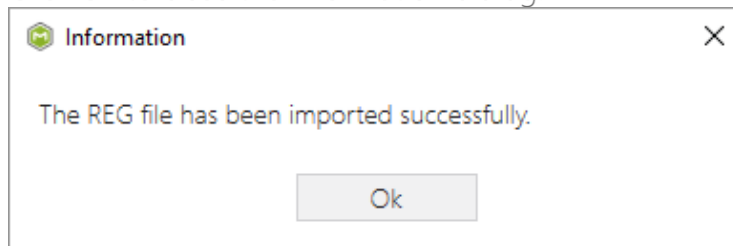
[11]. In order to import registry entries from the REG file, go to the Registry tab and click the Import registry button, located in the bottom part of the window. Note that the left 'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



[12]. Choose a REG file, which you want to import to the project, and click Open.



[13]. Click Ok to close the information dialog.



[14]. In order to build THINAPP package from your project, navigate to the Package -> THINAPP tab, select Entry points (shortcuts), primary data container location and other package options, and then click Build THINAPP.

Edit package - MyPackage.mgp

THINAPP

ThinApp Settings

Entry points

Name	Description
<input checked="" type="checkbox"/> my application.exe	C:\Program Files (x86)\My application\My application.exe
<input type="checkbox"/> cmd.exe	Debug entry point
<input type="checkbox"/> regedit.exe	Debug entry point

Primary data container

☒ Use one of the entry points

my application.exe

☐ Use separate .DAT file

my application.dat

Compression

☐ Compress virtual package

File system isolation mode

Full write access to non-system directories (Merged)

Sandbox location

☒ User profile (%AppData%\Thinstall)

☐ Custom location

Browse...

ThinApp Package Options

Inventory name

MyPackage

☐ Generate MSI package:

MyPackage.msi

Project location

C:\Users\pace\Documents\MSI Generator\Packages\MyPa

Browse... Go to...

Build Details

☐ Wow64=0

☒ AltArchitectureShortcut=1

☐ LoadDotNetFromSystem=Win7

☐ Only prepare ThinApp package structure

☒ Prepare ThinApp package structure and build the package

Build log

Open log

Type	Elapsed	Step

Elapsed time 00:00

Build THINAPP

NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed. If you have installed this tool to the custom location, go to the MENU -> Settings, select the Custom ThinApp install location option and then click Browse... to choose the installation location of the VMware ThinApp tools.

- [15]. Click Go to..., located next to the Project location field, to open the package containing folder in Windows Explorer.

Edit package - MyPackage.mgp

THINAPP

ThinApp Settings

Entry points

Name	Description
<input checked="" type="checkbox"/> my application.exe	C:\Program Files (x86)\My application\My application.exe
<input type="checkbox"/> cmd.exe	Debug entry point
<input type="checkbox"/> regedit.exe	Debug entry point

Primary data container

☒ Use one of the entry points

my application.exe

☐ Use separate .DAT file

my application.dat

Compression

☐ Compress virtual package

File system isolation mode

Full write access to non-system directories (Merged)

Sandbox location

☒ User profile (%AppData%\Thinstall)

☐ Custom location

Browse...

ThinApp Package Options

Inventory name

MyPackage

☐ Generate MSI package:

MyPackage.msi

Project location

C:\Users\pace\Documents\MSI Generator\Packages\MyPa

Browse... Go to...

Build Details

☐ Wow64=0

☒ AltArchitectureShortcut=1

☐ LoadDotNetFromSystem=Win7

☐ Only prepare ThinApp package structure

☒ Prepare ThinApp package structure and build the package

Build log

Open log

Type	Elapsed	Step
	00:02:50	Operation was completed successfully
	00:02:50	SUCCESS: my application.exe, size=5888k
	00:02:50	my application.exe
	00:02:49	Enterprise Edition, licensed to demo
	00:02:49	Copyright 1998-2016, VMware, Inc. All rights reserved.
	00:02:49	VMware ThinApp Runtime Linker Version 5.2.2-4435715. Built Sep 26 2016

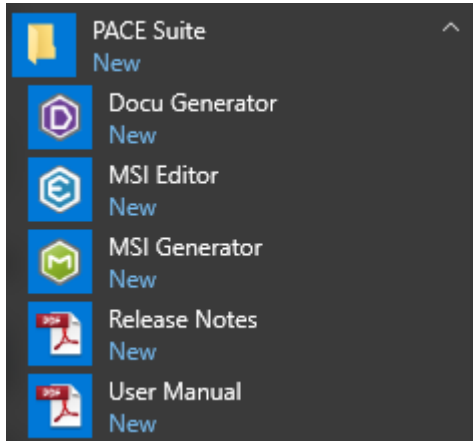
Elapsed time 00:02:50

Build THINAPP

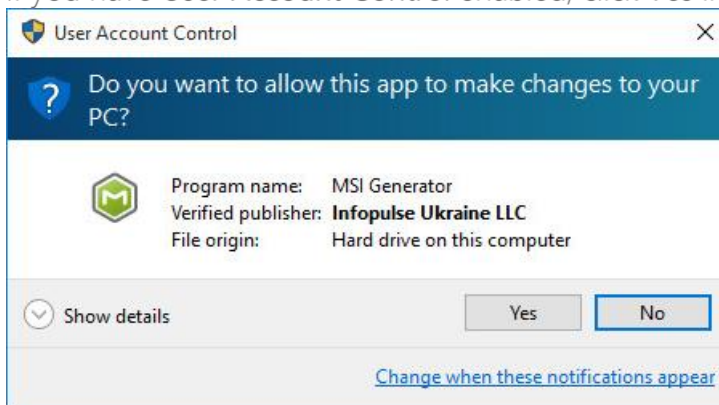
3.6.2 Convert (Repackage) EXE, MSI to THINAPP

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into THINAPP package using MSI Generator.

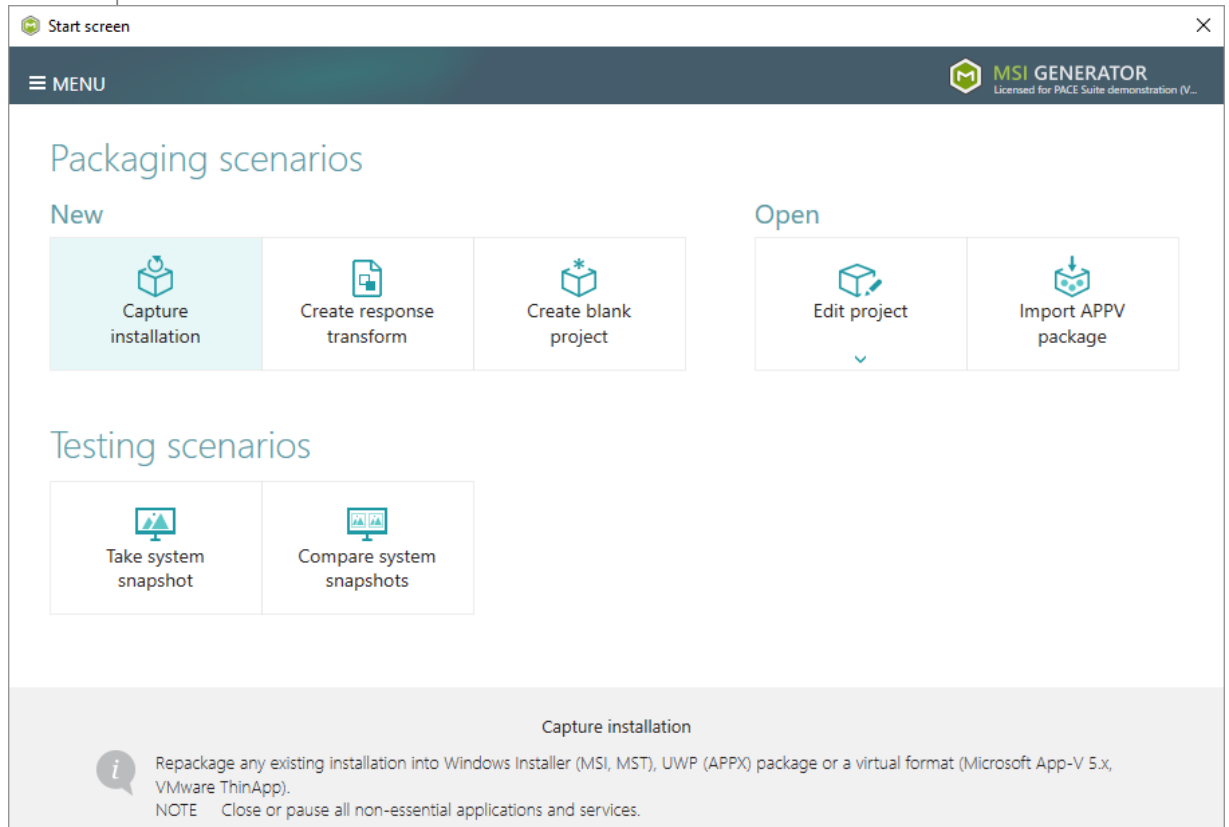
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



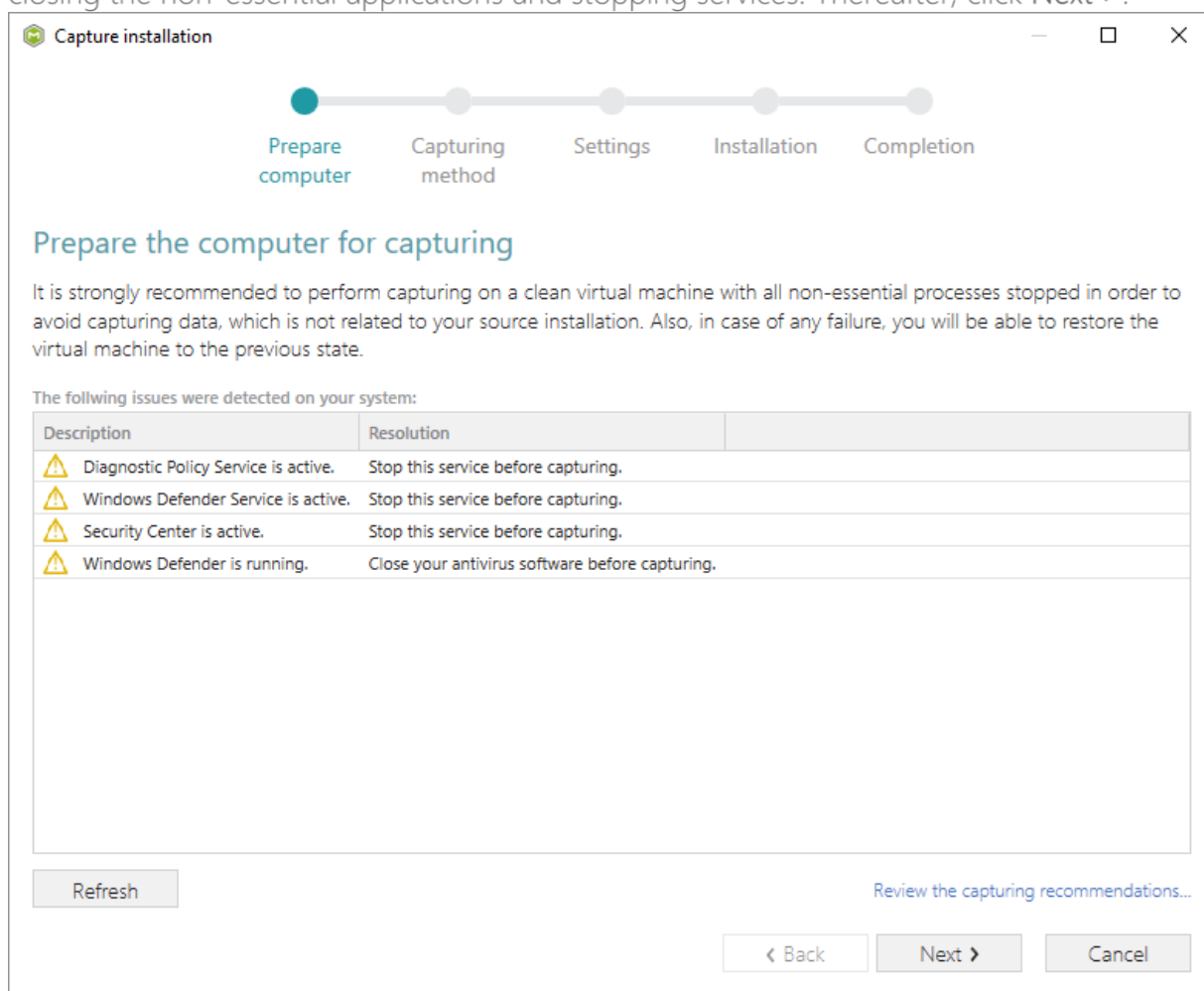
- [2]. If you have User Account Control enabled, click Yes in the opened window.



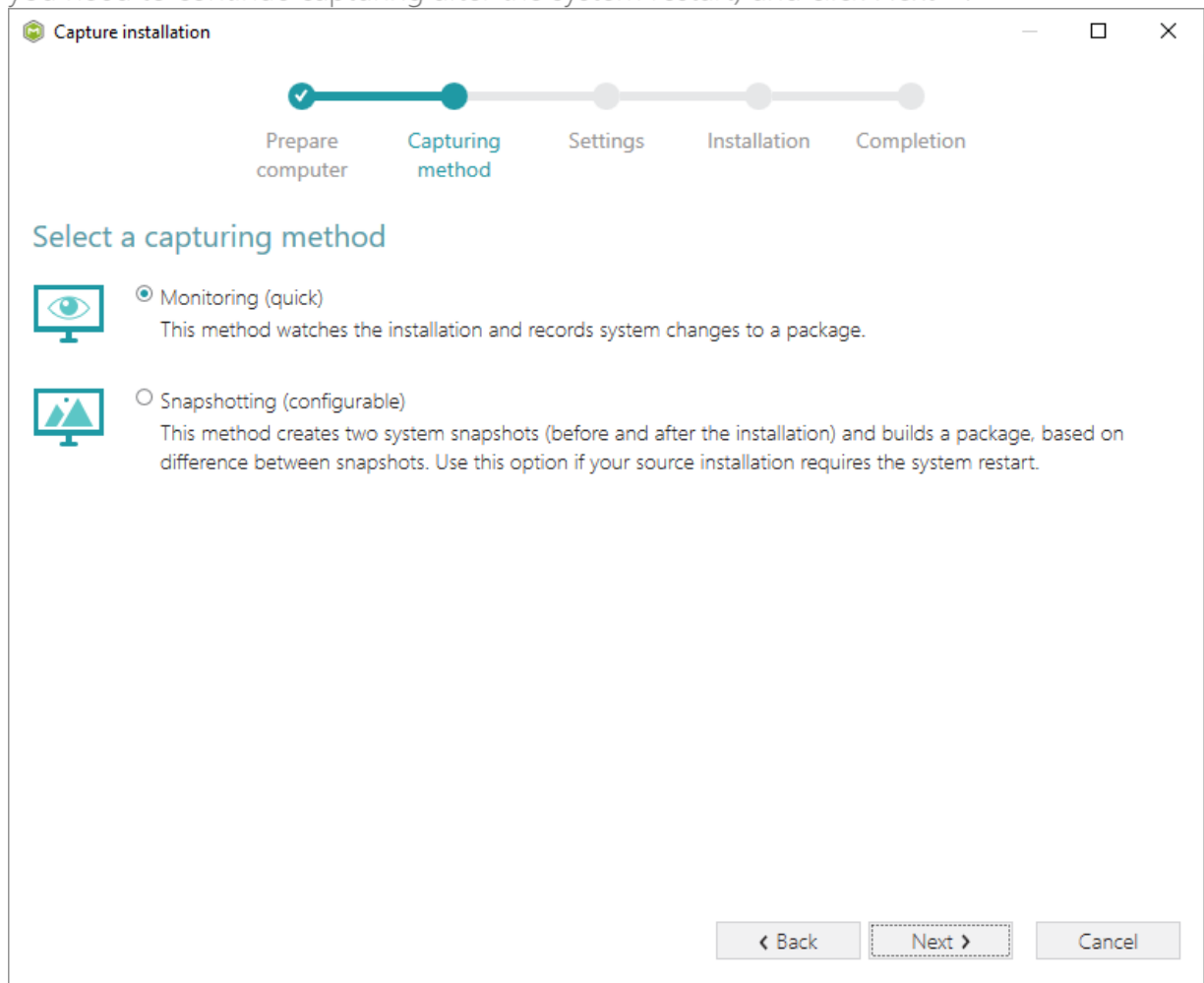
[3]. Click Capture installation.



- [4]. Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- [5]. Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- [6]. Here you can review and update package name, disable needless exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Progress bar: Prepare computer, Capturing method, **Settings**, Installation, Completion

Settings

Package name: PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

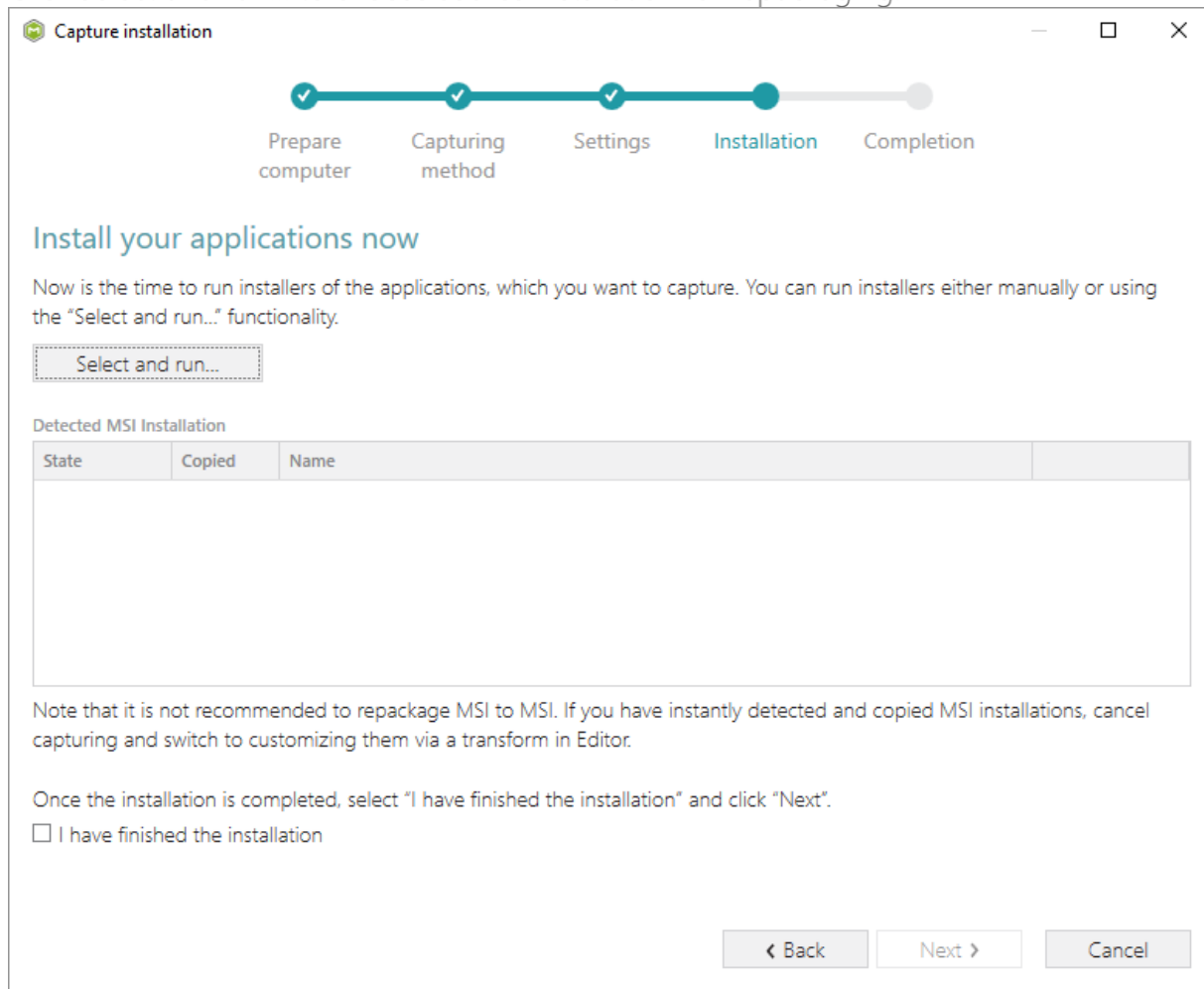
Scanning areas

Application objects:

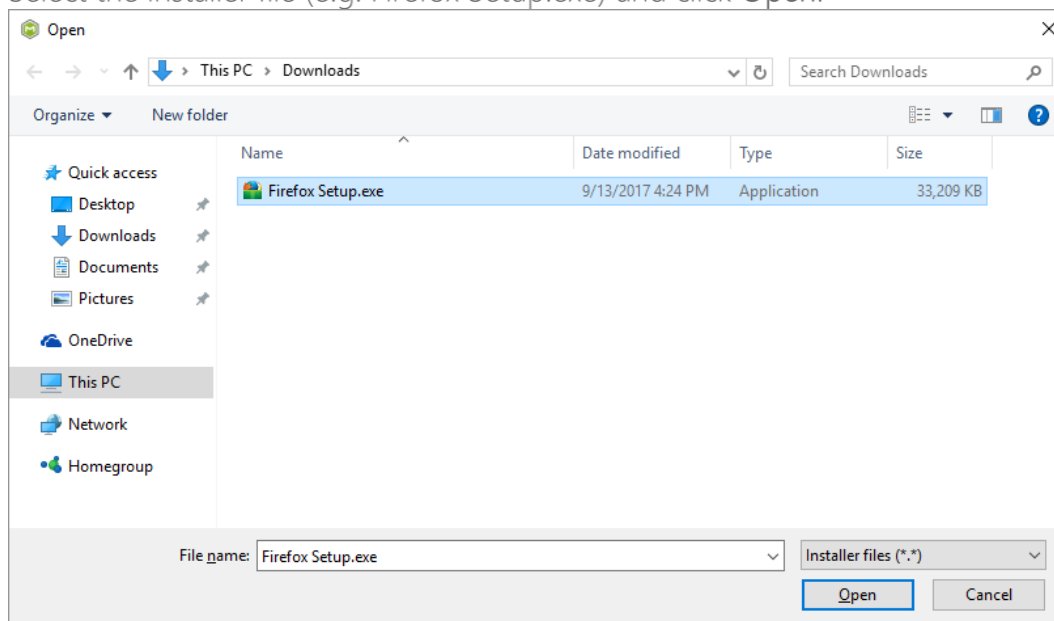
- ☒ Permissions
- ☒ Services
- ☒ Printers

Buttons: < Back, **Next >**, Cancel

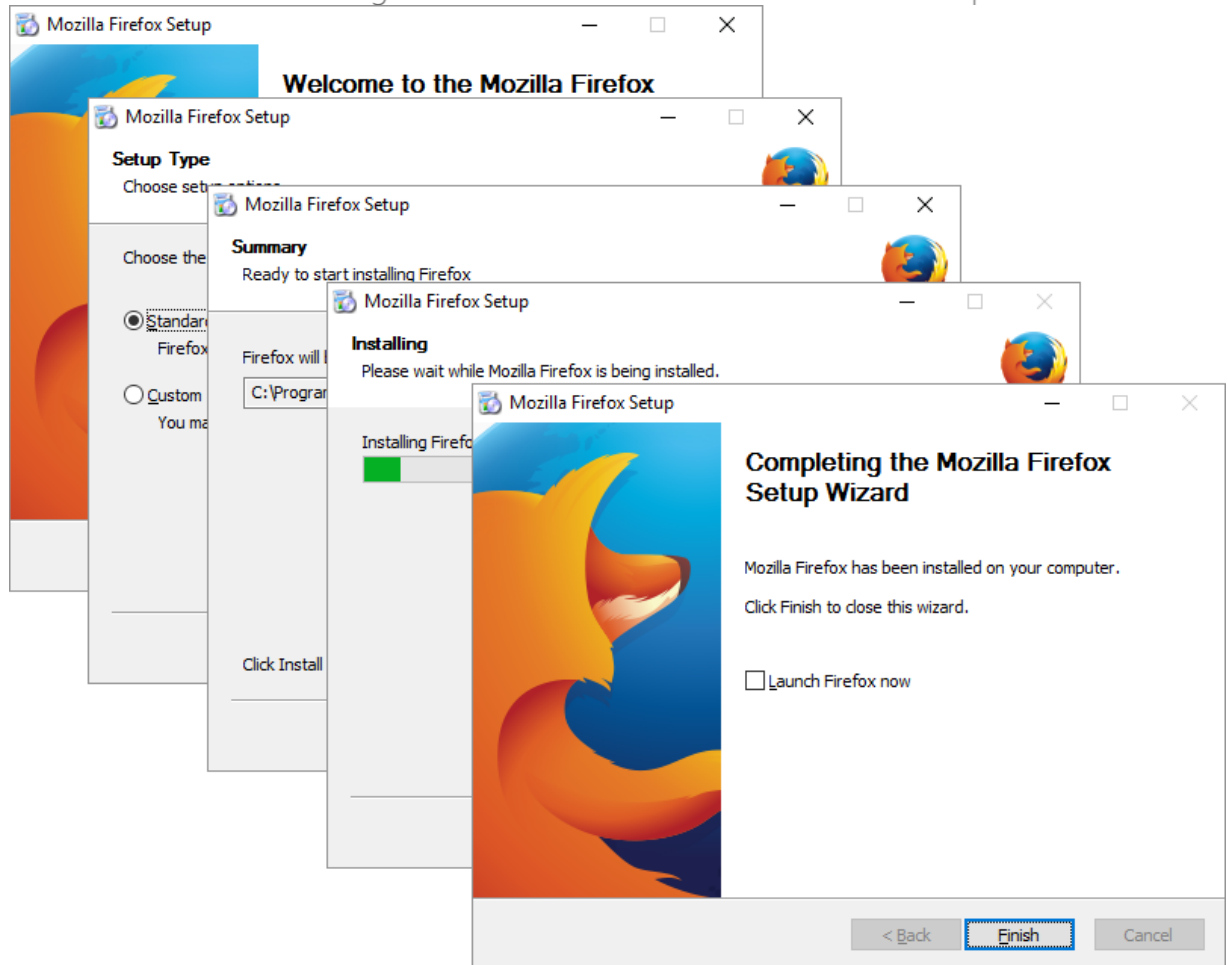
- [7]. Click **Select and run...** to choose source installation for repackaging.



- [8]. Select the installer file (e.g. Firefox Setup.exe) and click **Open**.

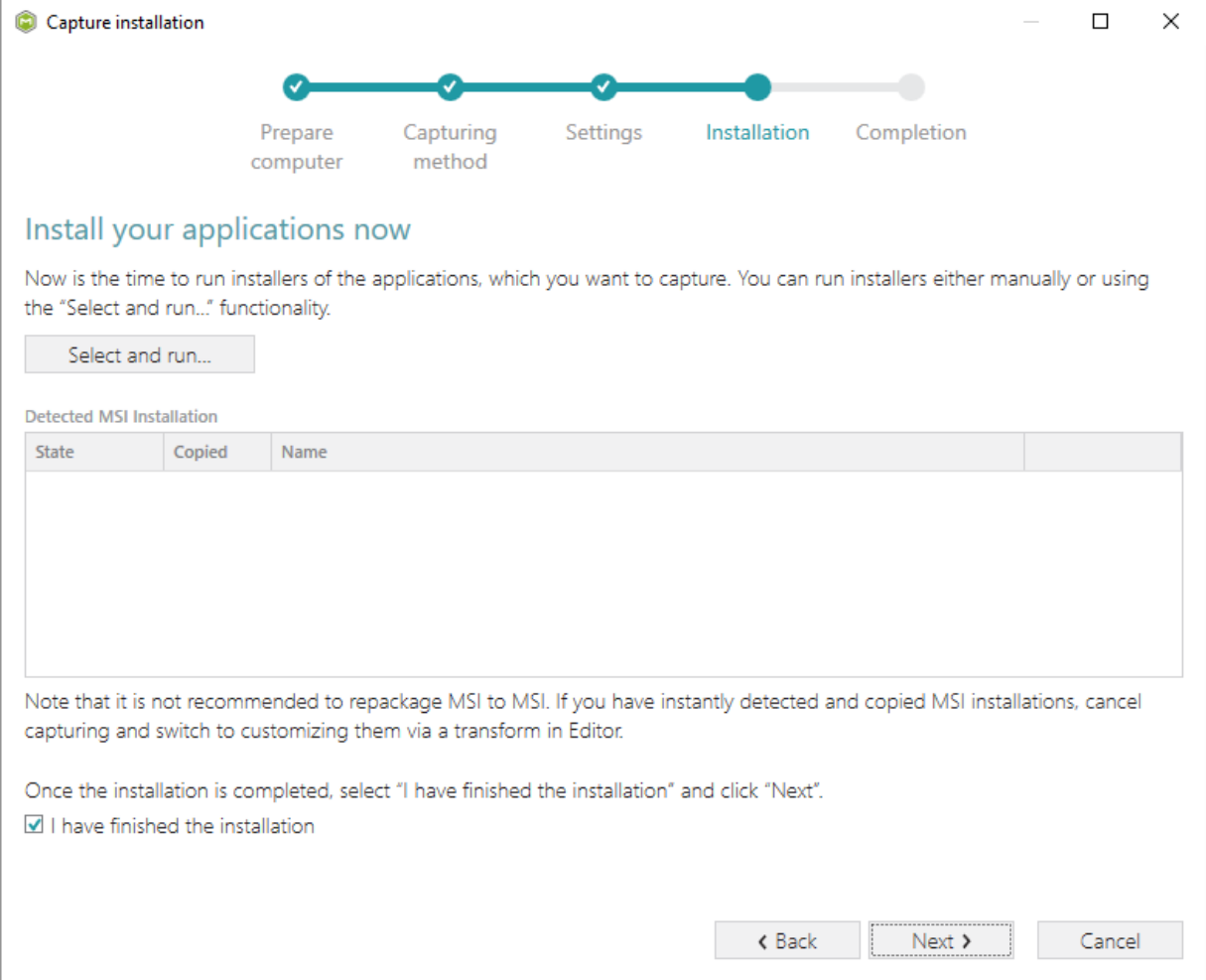


- [9]. Follow the installation dialogs of the launched source installation to complete it.



- [10]. Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.

[11]. Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back Next > Cancel

- [12]. Wait a little, while the capturing process is finishing, filtering captured data and creating the project.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

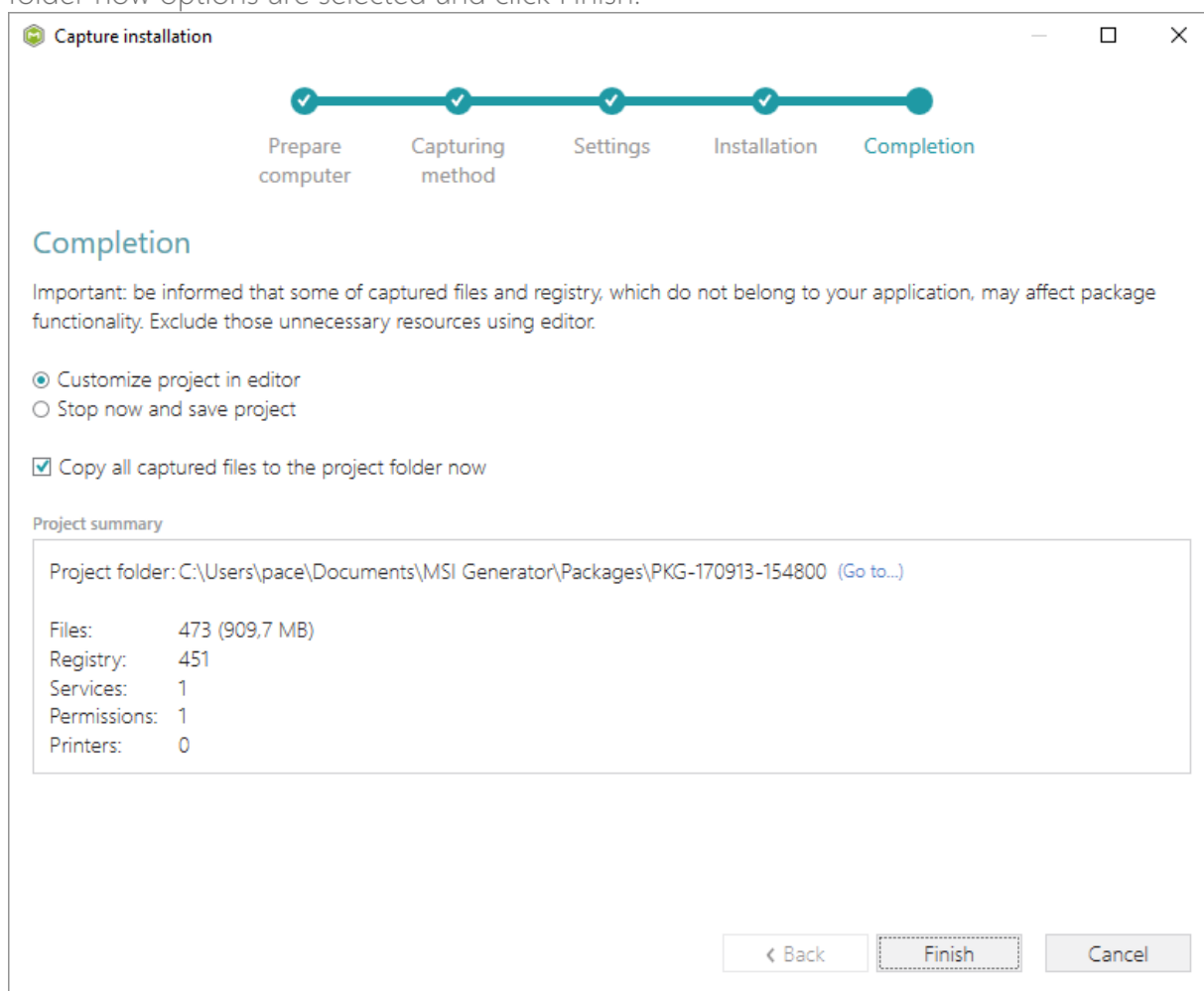
Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

00:08 Scanning Services

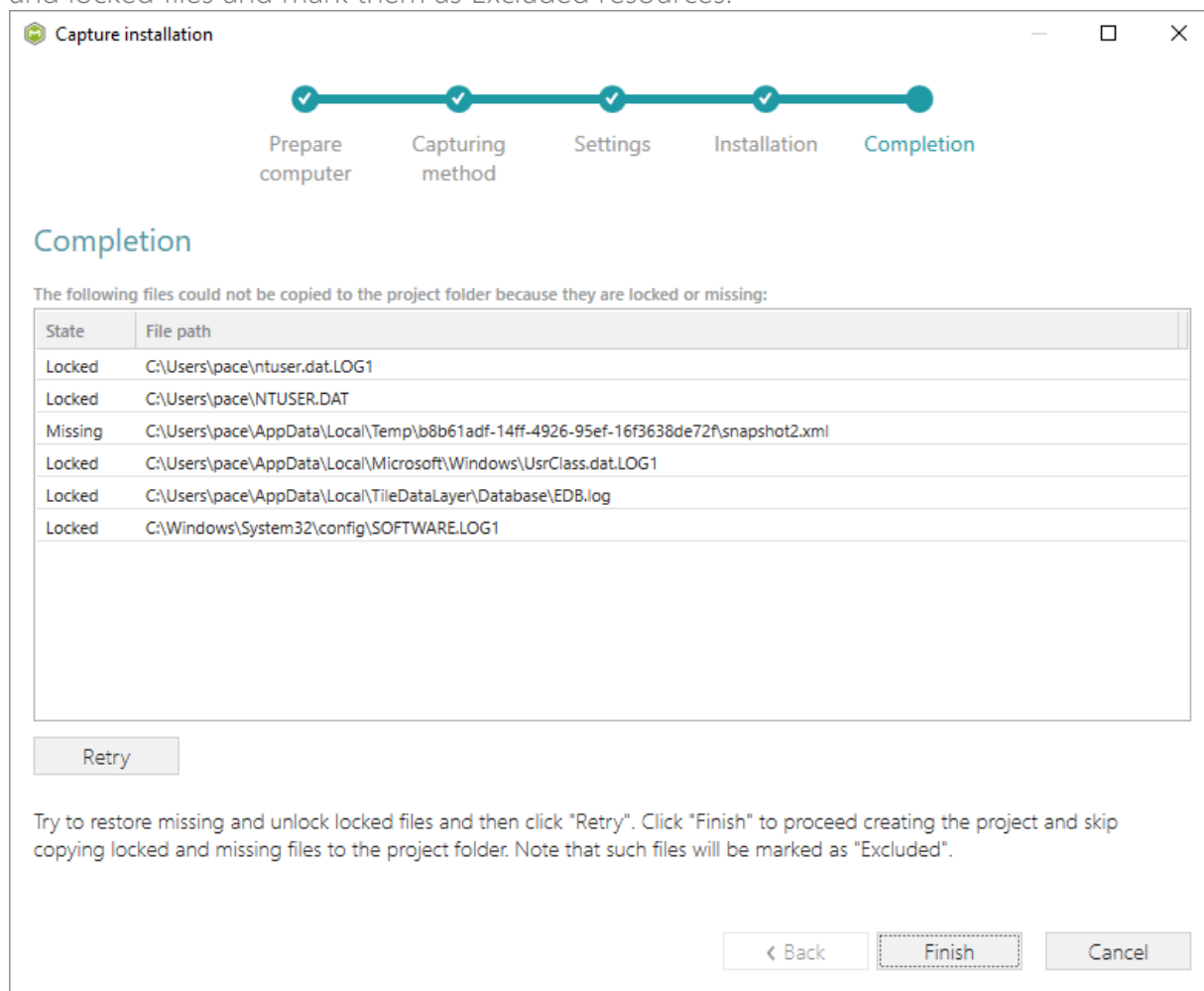
< Back Next > Cancel

- [13]. Leave selected the Customize project in editor and Copy all captured files to the project folder now options are selected and click Finish.



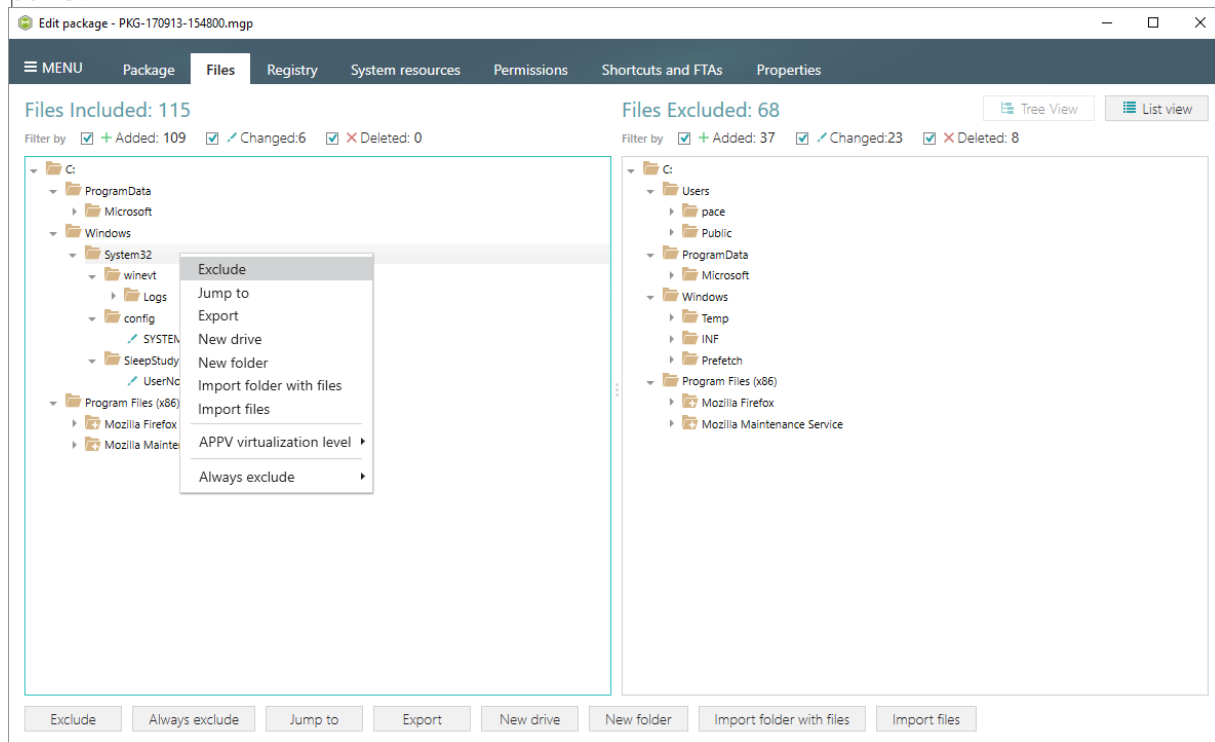
- [14]. The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing

and locked files and mark them as Excluded resources.

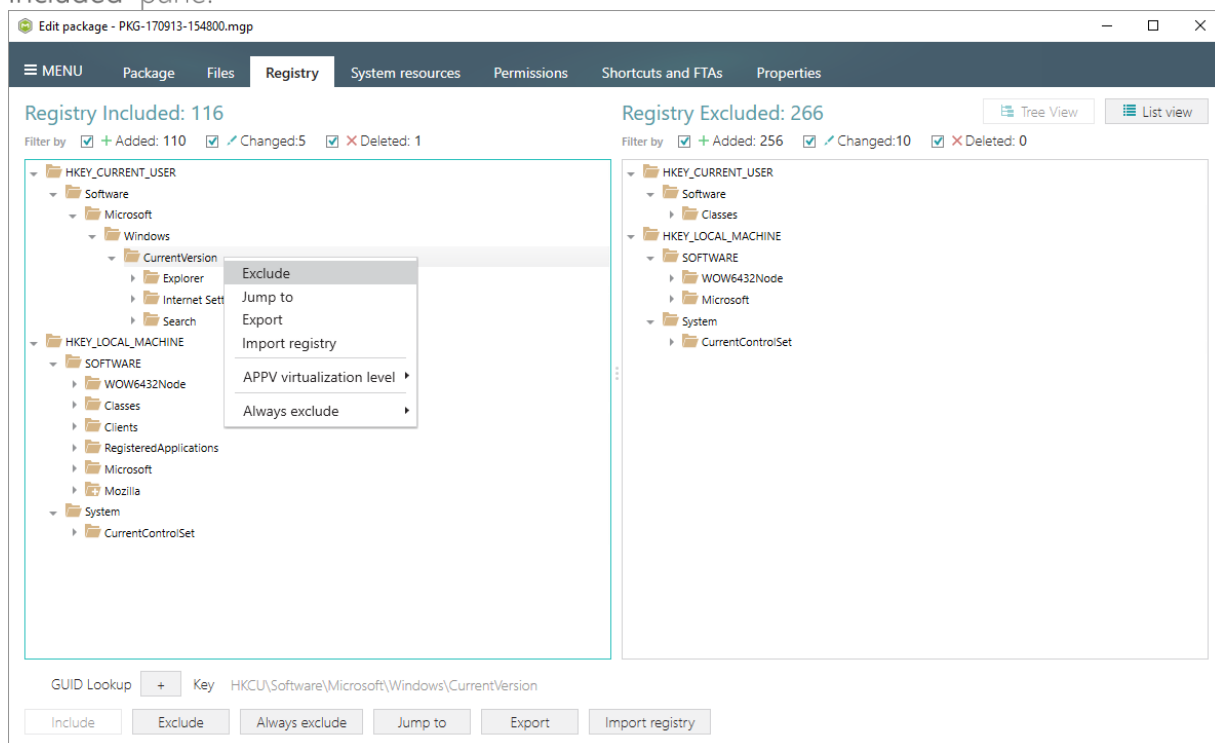


- [15]. Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).
- [16]. In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included'

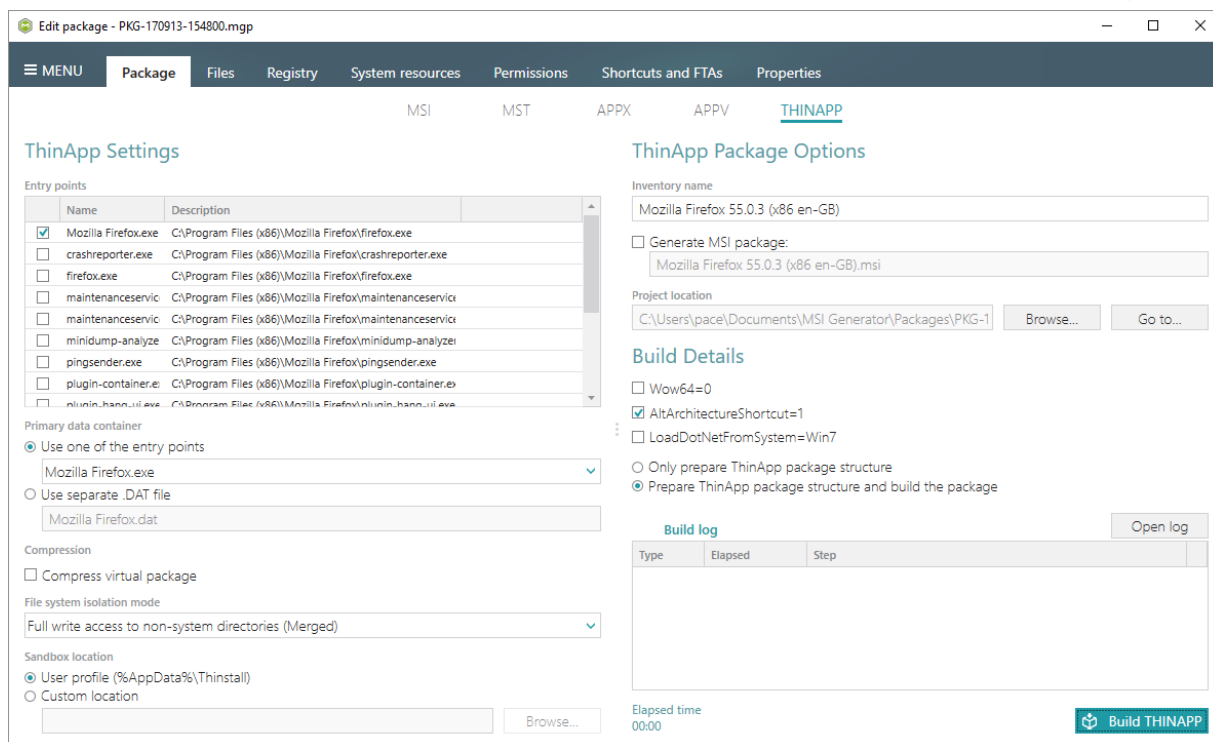
pane.



- [17]. In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

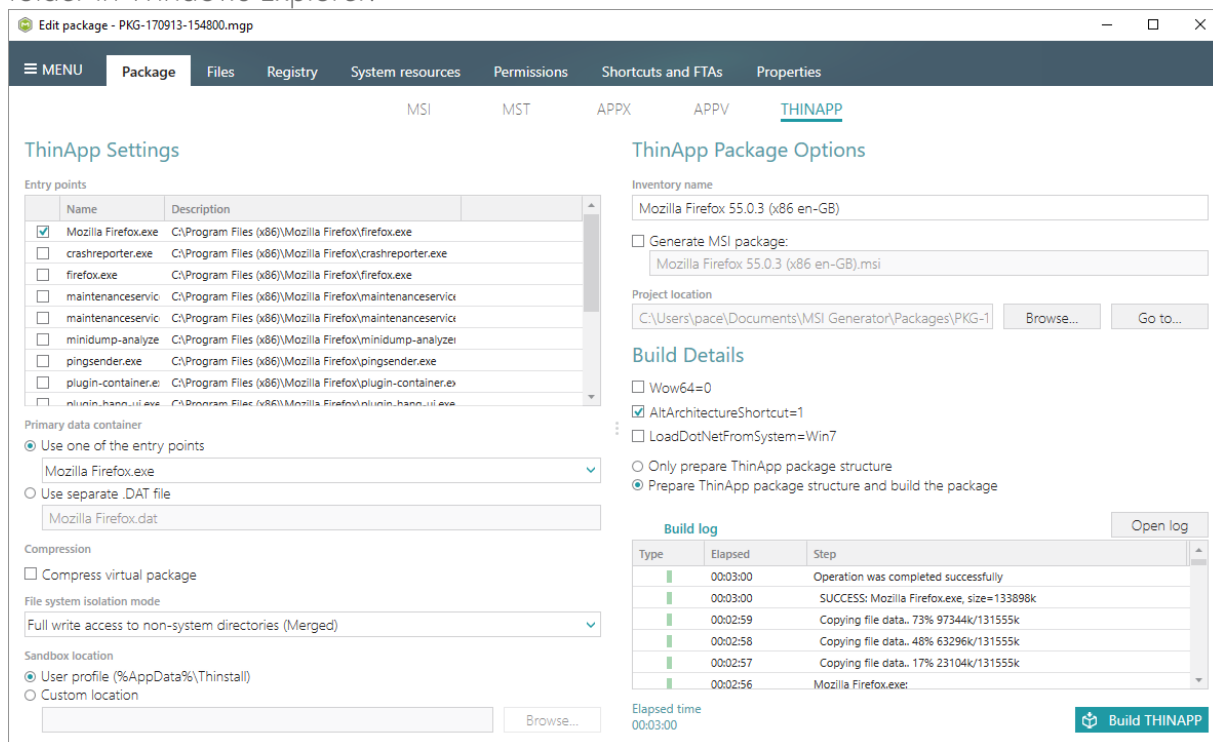


- [18]. Finally, to build THINAPP package from the project, navigate to the Package -> THINAPP tab, review Entry points (shortcuts), primary data container location and other package options, and then click Build THINAPP.



NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed. If you have installed this tool to the custom location, go to the MENU -> Settings, select the Custom ThinApp install location option and then click **Browse...** to choose the installation location of the VMware ThinApp tools

- [19]. Click **Go to...**, located next to the Project location field, to open the package containing folder in Windows Explorer.



3.7 Edit MSI/MST

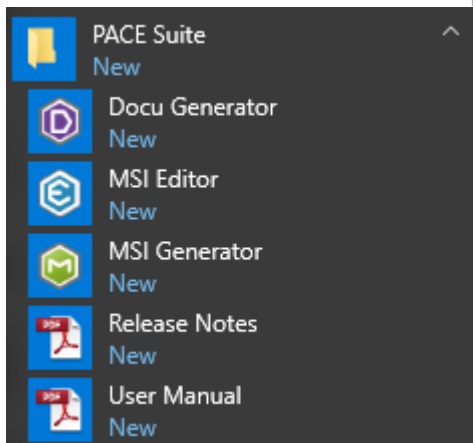
Choose a scenario that better suits your needs:

- **Manage Files and Folders**, described in section 3.7.2
Review files and folders of the package, add new standard (system) and custom folders, import files, extract COM information and .NET assemblies from the imported files.
- **Manage Registry**, described in section 3.7.3
Review registry of the package, add new registry keys and values, import registry from the REG file, and export registry to the REG file.
- **Manage Shortcuts**, described in section 3.7.4
Review shortcuts of the package, add new shortcuts to files, folders, URLs or import them from the file system.
- **Manage Custom Actions**, described in section 3.7.5
Review custom and standard actions of the package, edit and add new actions to any sequences of all installation modes.
- **Manage Device Drivers**, described in section 3.7.6
Review device drivers of the package, edit and add new drivers.

3.7.1 Pre-Condition

Open an MSI package following the instructions below:

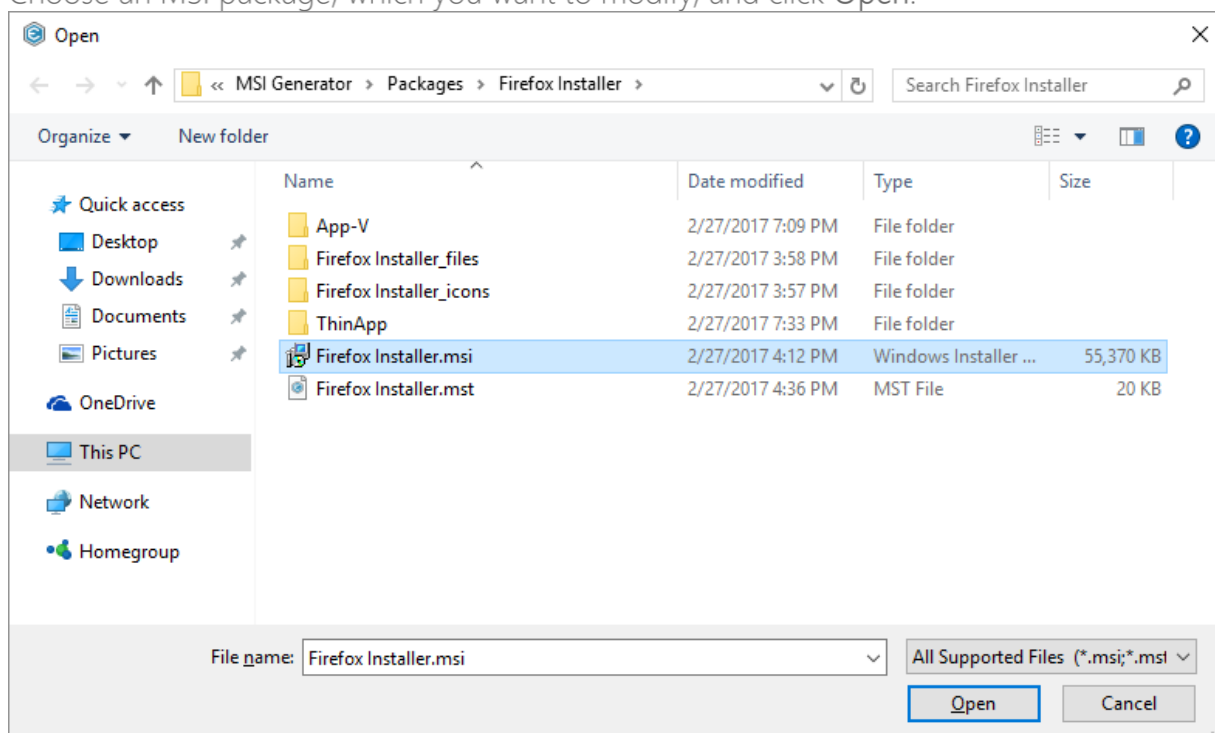
- [1]. Launch MSI Editor from the desktop or the start menu shortcut.



[2]. Select Open... from MENU.

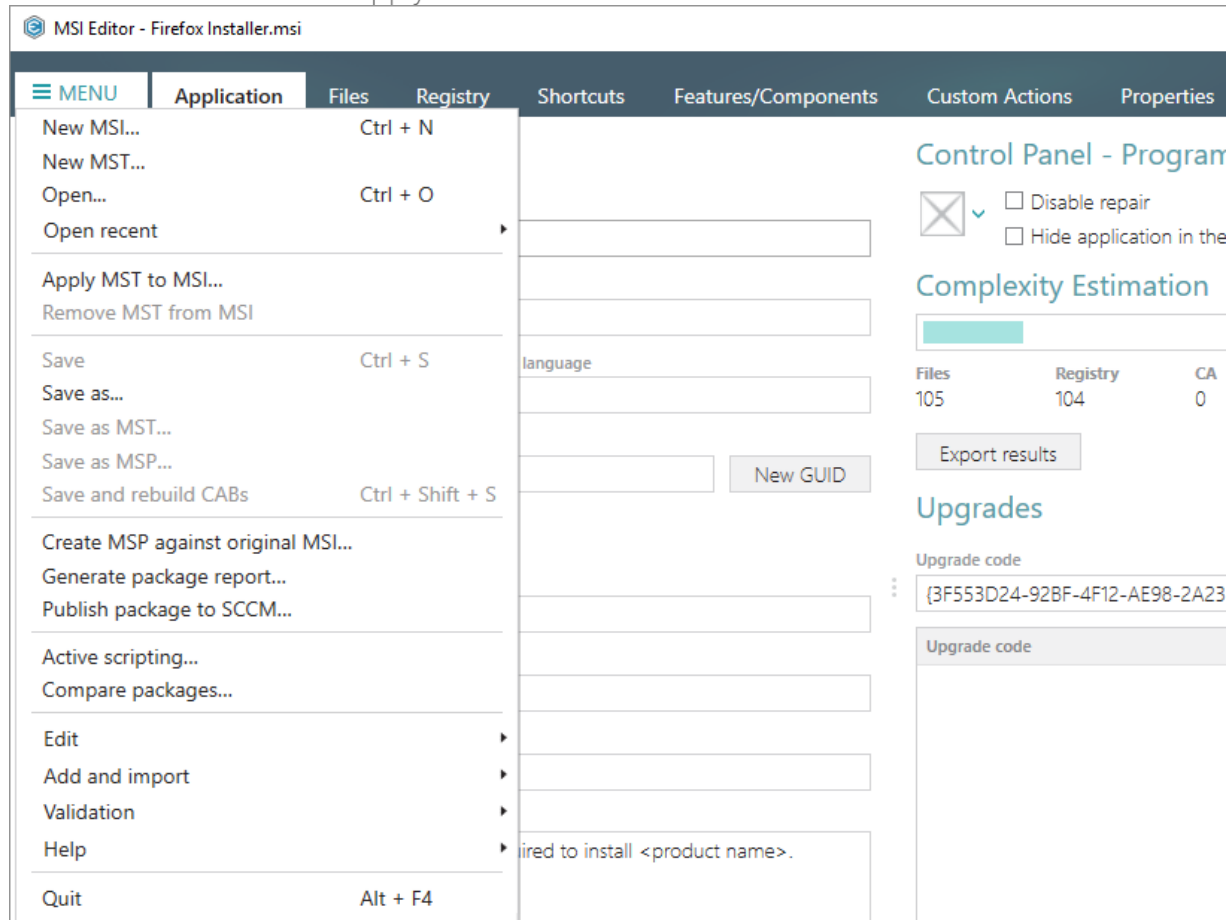


[3]. Choose an MSI package, which you want to modify, and click Open.



[4]. If you want to modify MSI package via Transform (MST), you can either apply existing MST by selecting Apply MST to MSI... from MENU and choosing an MST file or select

New MST... to create and apply a new transform file.



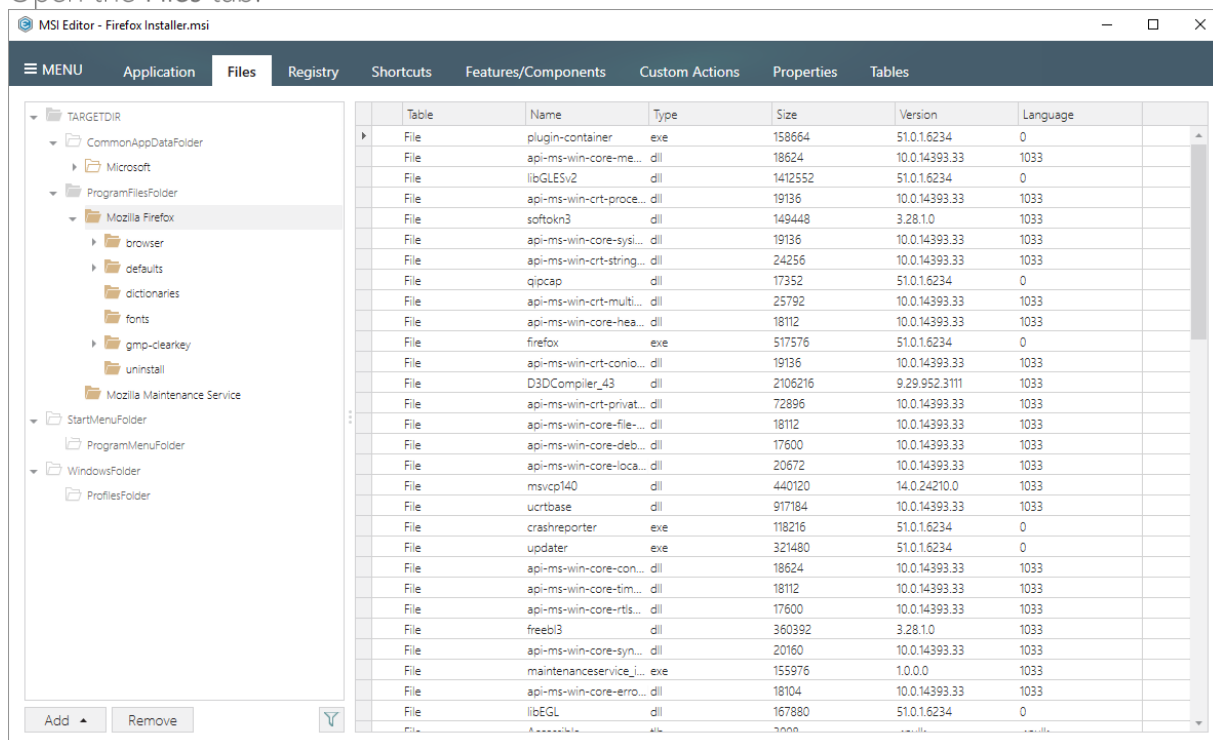
3.7.2 Files and Folders

Choose a scenario that better suits your needs:

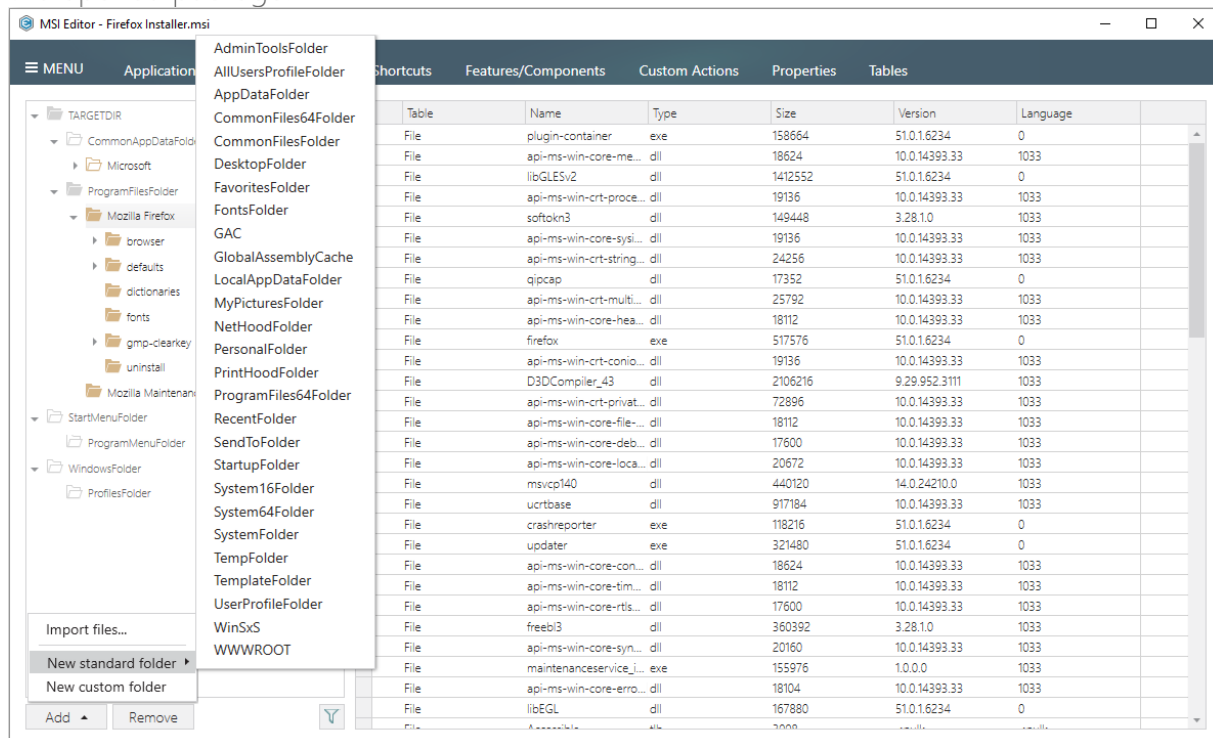
- **Add Standard Folder**, described in section 3.7.2.1
Add a new standard (system) folder from the list into the package.
- **Add Custom Folder**, described in section 3.7.2.2
Add a new custom folder.
- **Import Files and COM Information**, described in section 3.7.2.3
Import files with the extracted on-the-fly COM information.

3.7.2.1 Add Standard Folder

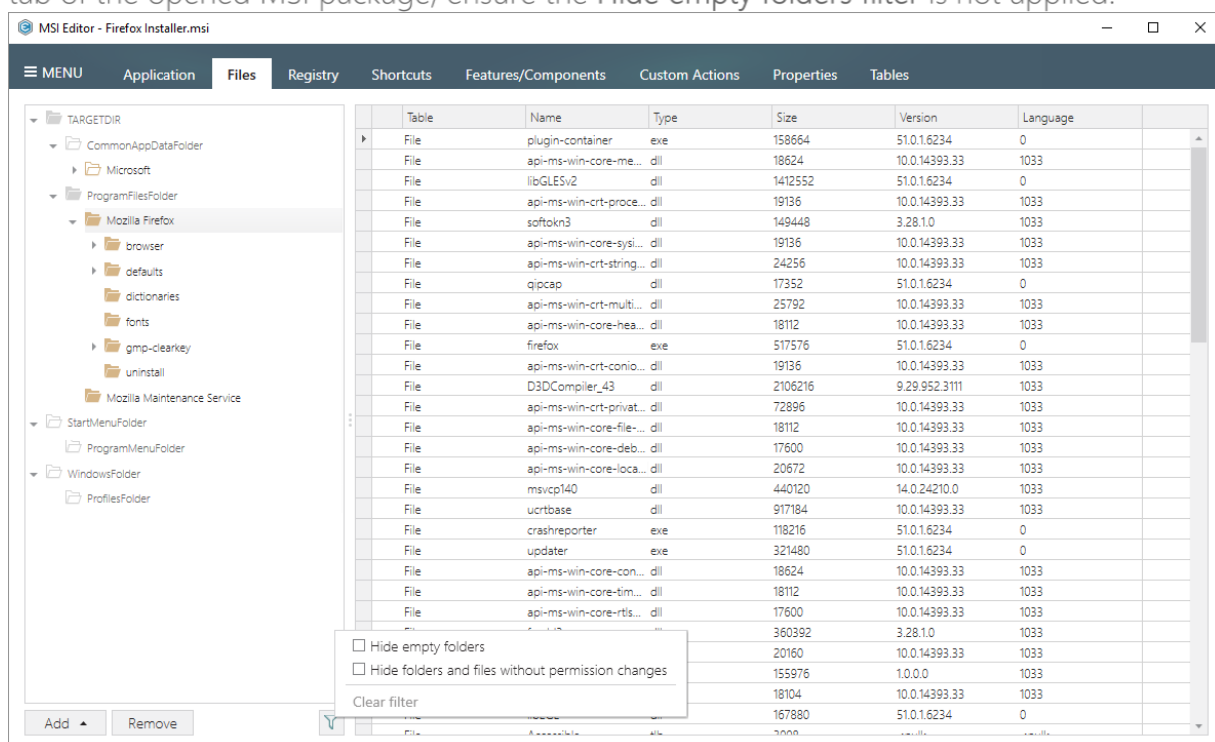
[1]. Open the Files tab.



[2]. Click Add -> New standard folder and choose necessary standard folder from the dropped list. The list of standard folders contains only those folders, which do not exist in the opened package.

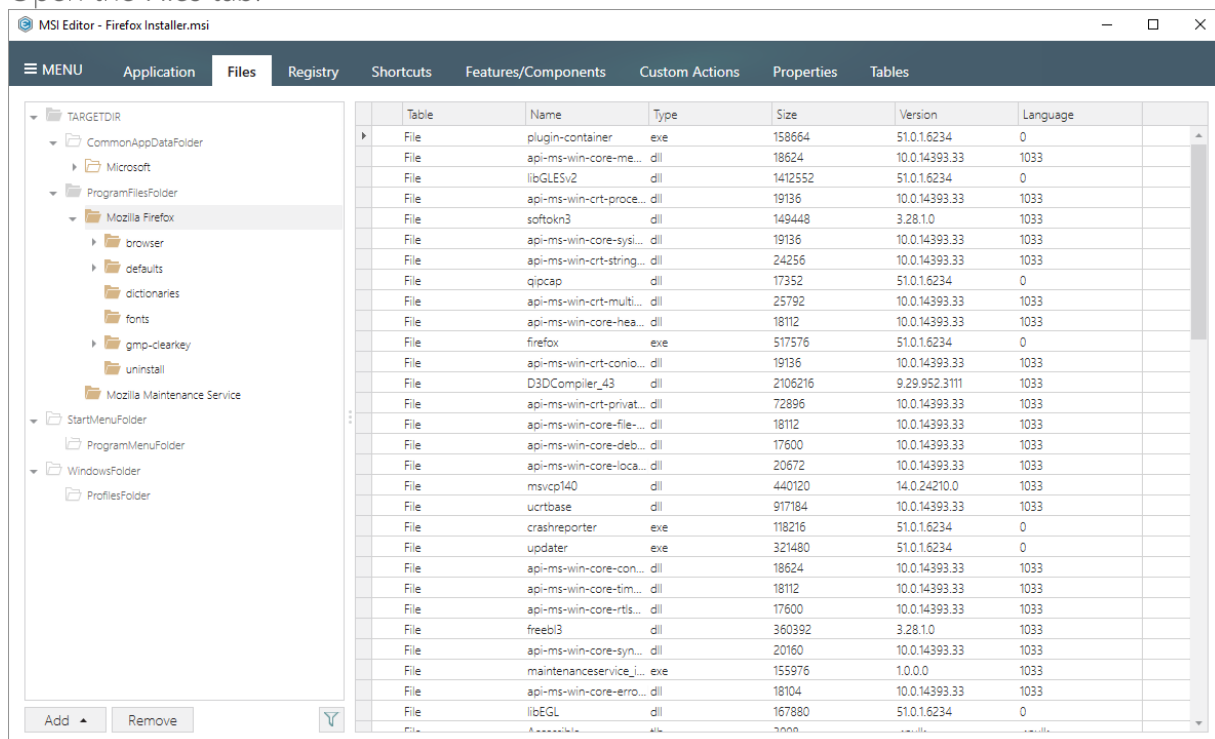


- [3]. If you cannot find standard folder in the dropped list and in the folder Tree on the Files tab of the opened MSI package, ensure the Hide empty folders filter is not applied.

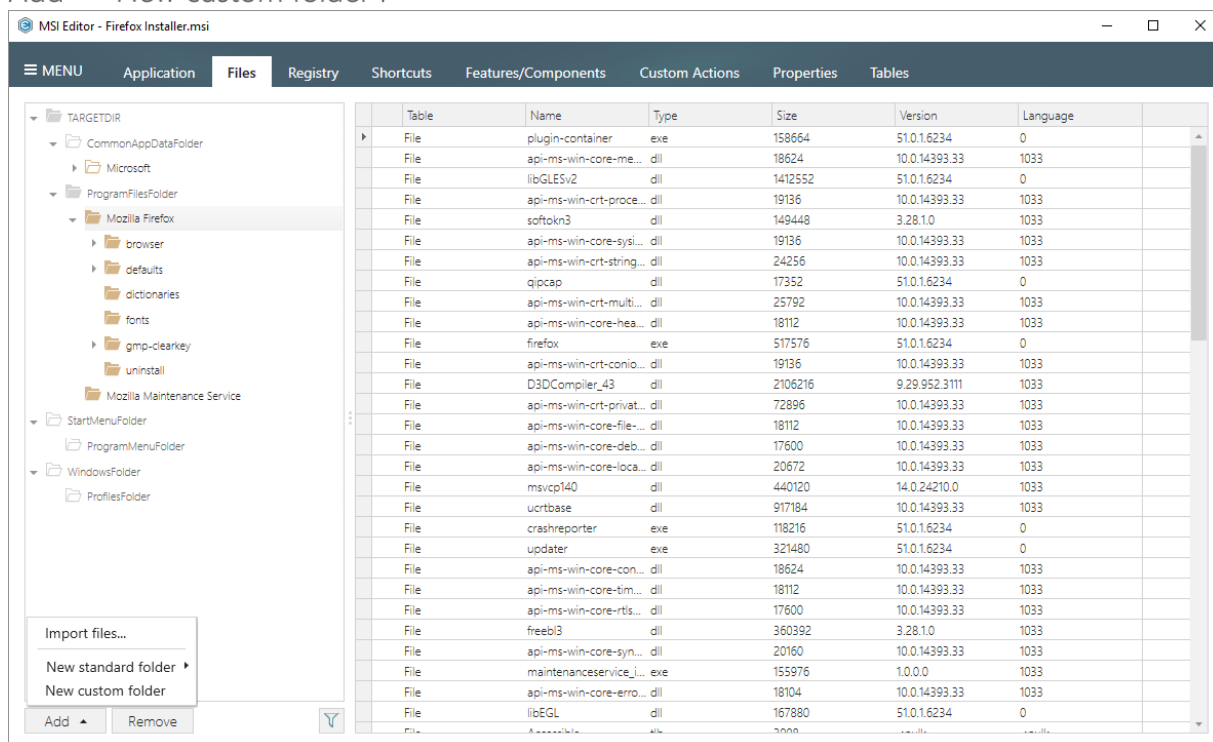


3.7.2.2 Add Custom Folder

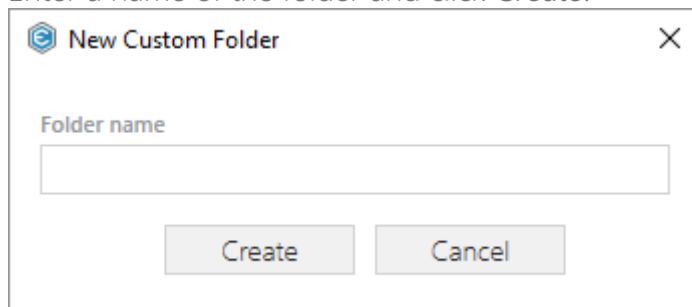
- [1]. Open the Files tab.



- [2]. Select a folder in the folder Tree, to which you want to add a custom folder, and click Add -> New custom folder .



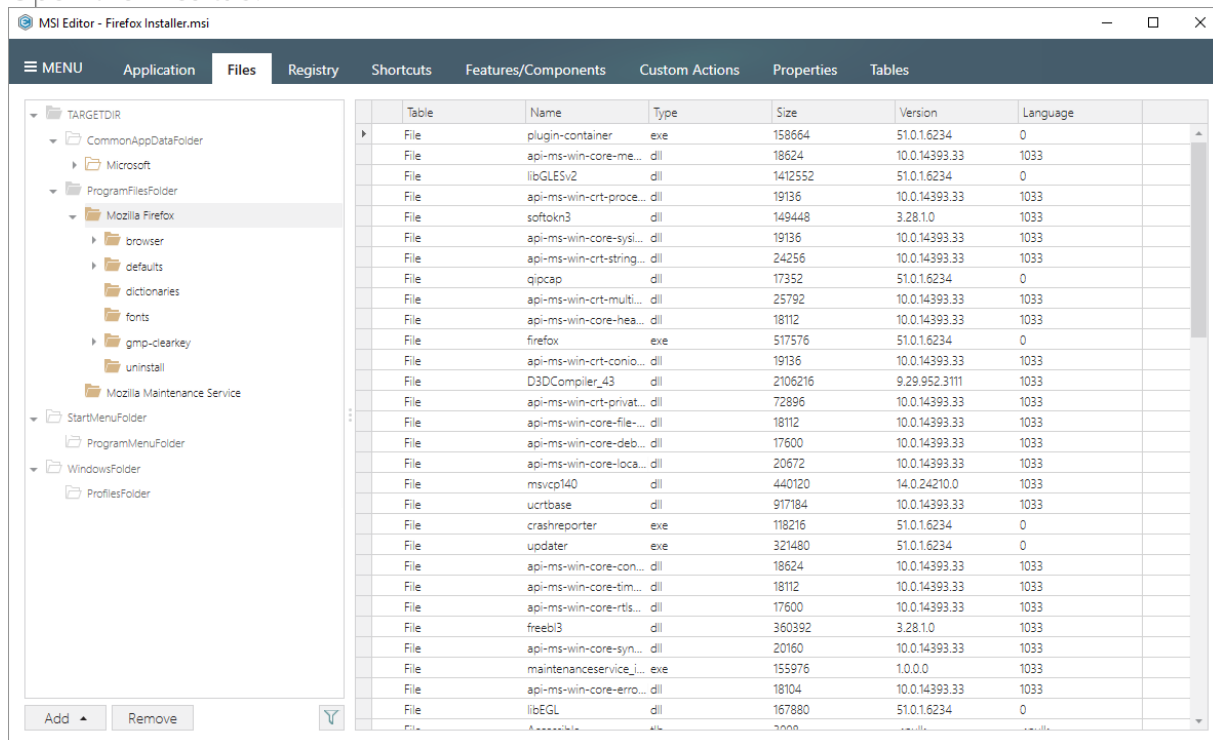
- [3]. Enter a name of the folder and click Create.



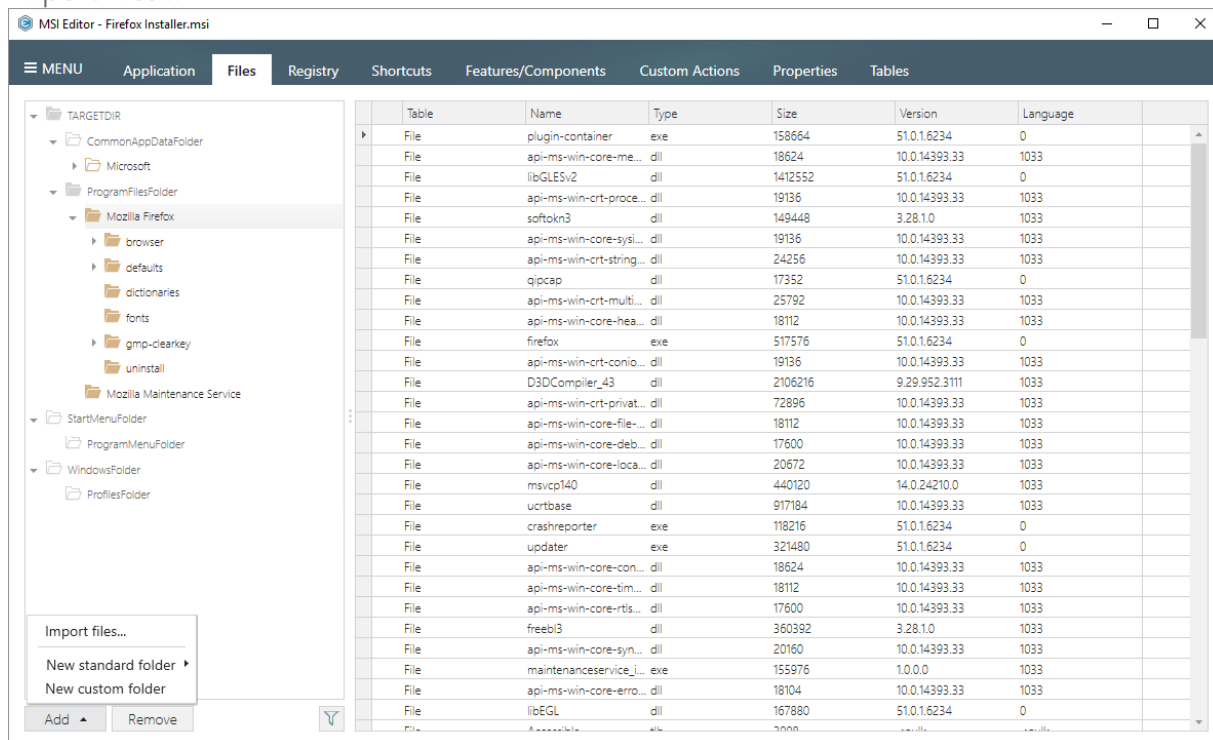
3.7.2.3 Import Files and COM Information

NOTE MSI Editor allows extracting and importing to the package both 32-64 bit COM information and .NET assemblies from the selected (*.DLL, *.OCX, *.LTB) files.

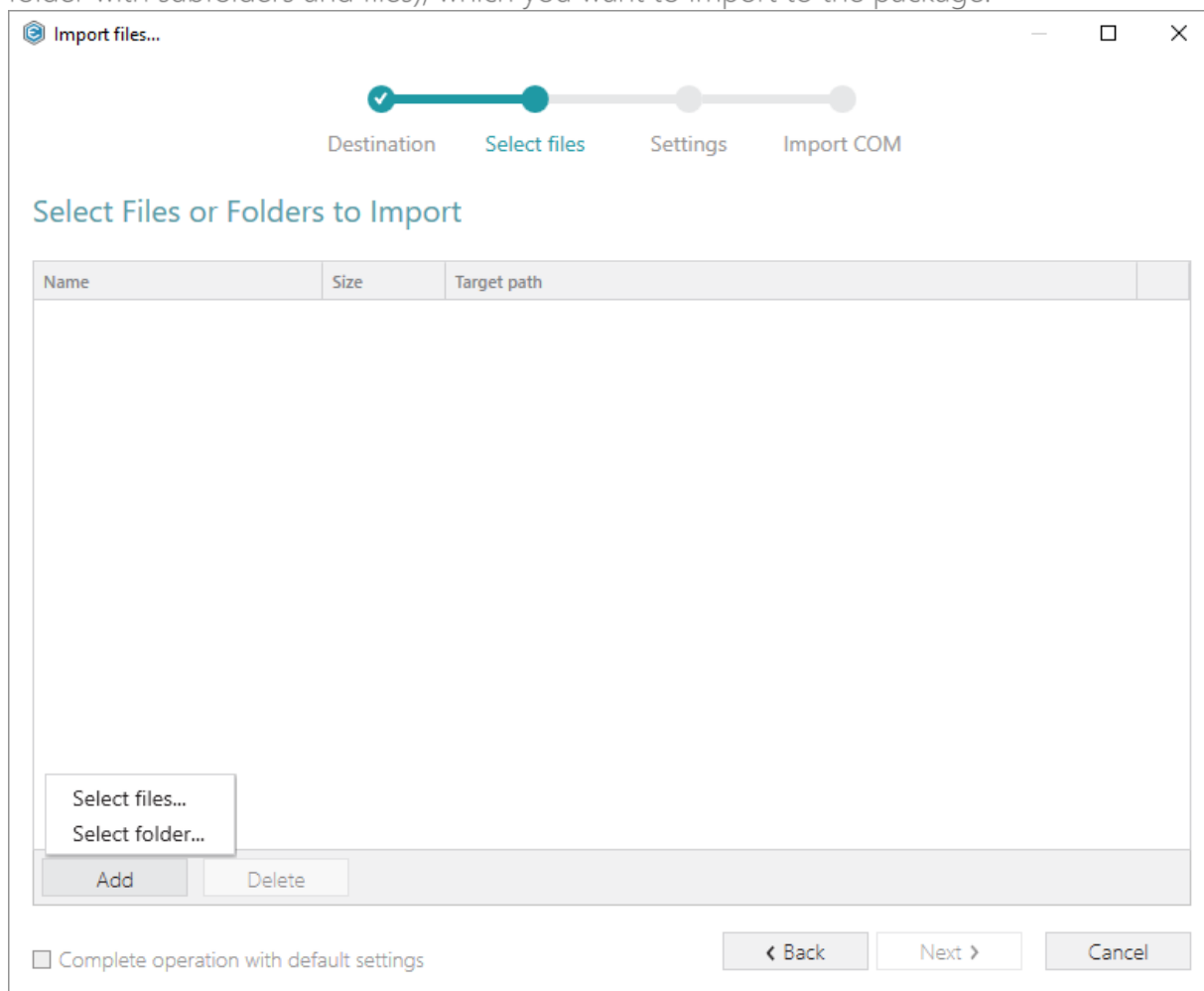
[1]. Open the Files tab.



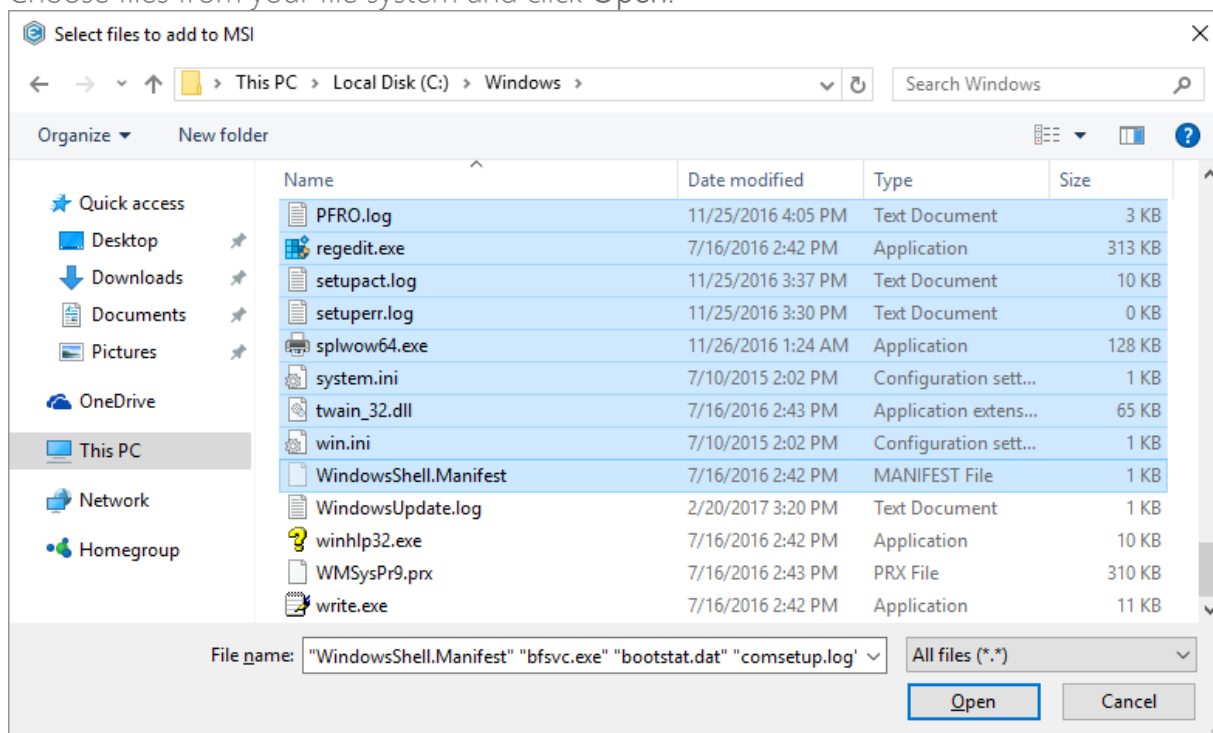
[2]. Select a folder from the folder Tree, to which you want to import files, and click Add -> Import files...



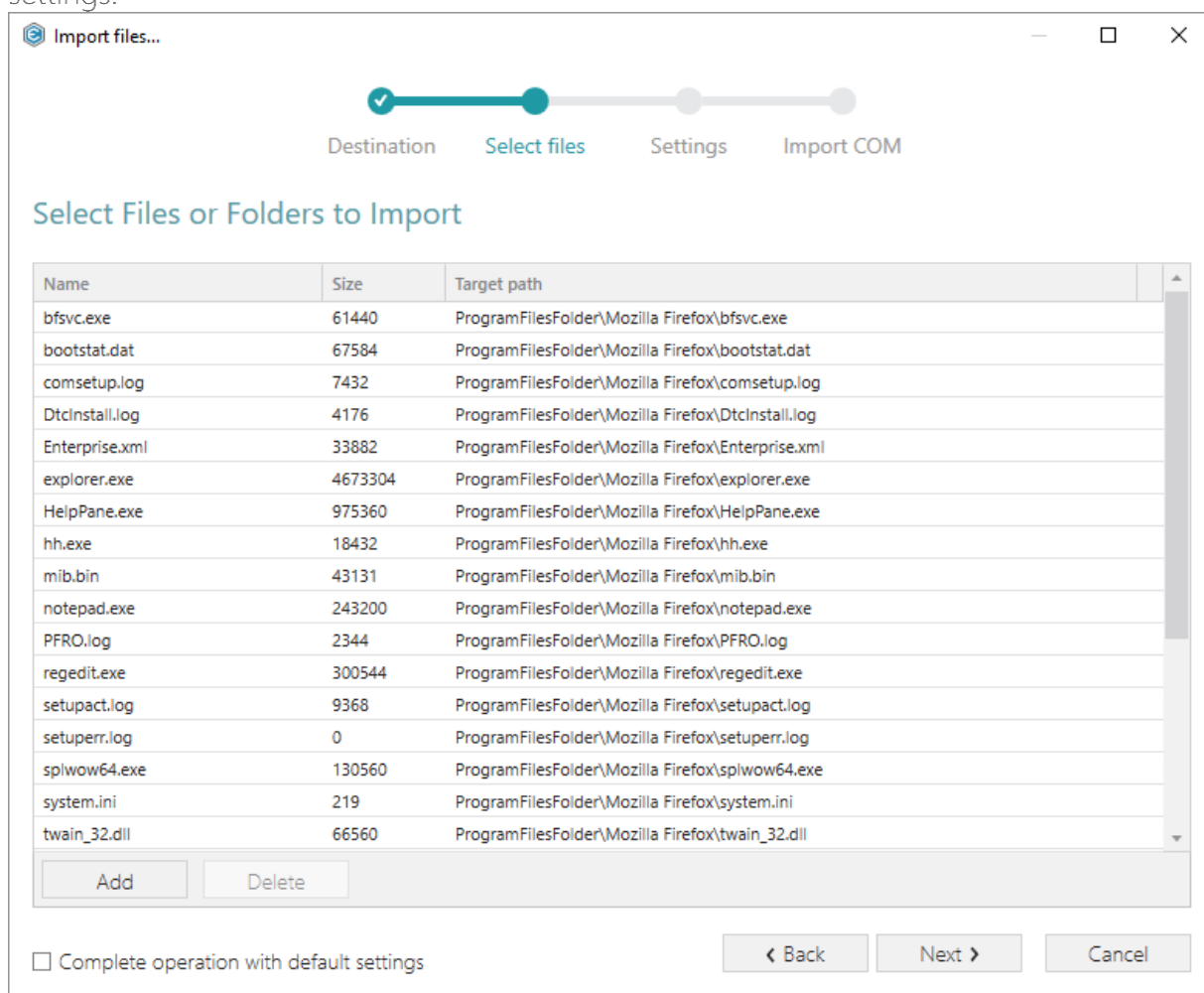
- [3]. Click Add -> Select files... to choose files in a folder (or Add -> Add folder... to choose folder with subfolders and files), which you want to import to the package.



- [4]. Choose files from your file system and click Open.



- [5]. Review, add more or remove the chosen files and click **Next** to choose the file import settings.



- [6]. At this step, you can manage how to save INI files, select an MSI Feature, to which component with files will be assigned and select Compression type for your files. Below, in the tables, you will find the detailed description of these settings. Click **Next** to continue.

Import files...

✓

✓

DestinationSelect filesSettingsImport COM

Settings

Select how to handle INI files

INI files

Install standard INI files via IniFile table; non-standard via File table (recommended)

[Show non-standard INI-files](#)

Select a feature to assign new components to

Feature

<New Feature>

New feature...

☒ Create new feature

Select a compression type for new files

Media type

New CAB file

☐ Complete operation with default settings

Back

Next

Cancel

INI files settings

Install standard INI files via IniFile table; non-standard via Files table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data will be saved to the 'File' table as binary files.

Install all INI files via File table

All INI files will be saved only to the 'File' table as binary files.

Install all INI files via File table and duplicate to IniFile table

All INI files will be saved to both the 'File' and the 'IniFile' tables. This option is used to install INI files with unsupported data keeping their original file structure and update the necessary INI file values.

Feature settings

Create new feature

Either the "PACE_Complete" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-machine locations, or the "PACE_UserPart" feature will be created (or used if exists) for keeping components with files, which will be installed to the per-user locations. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart"



one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

<a feature, selected from the list>	Components with files will be assigned to a feature, selected from the list.
-------------------------------------	--

Media type settings

New Cab file	The imported files will be compressed to a new external cabinet (CAB) file. The external cabinet files are always placed next to the MSI package.
Uncompressed	The imported files will be copied to the MSI folder without compression. Note that copied files will be placed to the folder structure accordance to their target paths.
Existing	The imported files will be compressed to the existing external cabinet (CAB) file, which was created during the previous file import. Note that this option is visible only if during the current editing session you have already imported files with 'New Cab file' option.

- [7]. Review the COM information, extracted from the selected files, and select the **Import COM information** option to import this registration information into the Registry table of



the opened MSI package. Click **Finish** to complete the files import.

File name	Root	Key	Value name	Value
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		C:\Windows\System32\dmview.ocx
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}	ThreadingModel	Apartment
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		131473
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		C:\Windows\System32\dmview.ocx
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		{AEB84C80-95DC-11D0-B7FC-B61140119C4A}
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		1.0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A}		C:\Windows\System32\dmview.ocx
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.PropertyPage
dmview.ocx	HKCR	DiskManagement.Control\CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		{AEB84C83-95DC-11D0-B7FC-B61140119C4A}

☐ Import COM information

< Back Finish Cancel

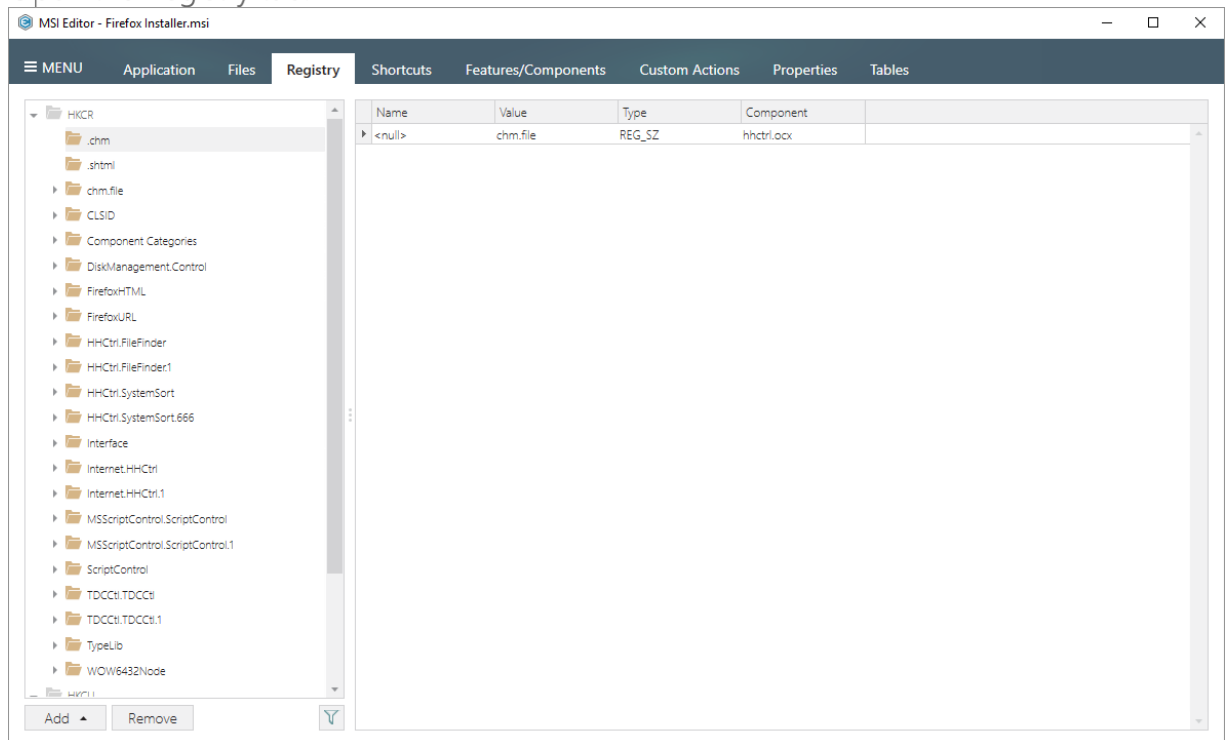
3.7.3 Registry

Choose a scenario that better suits your needs:

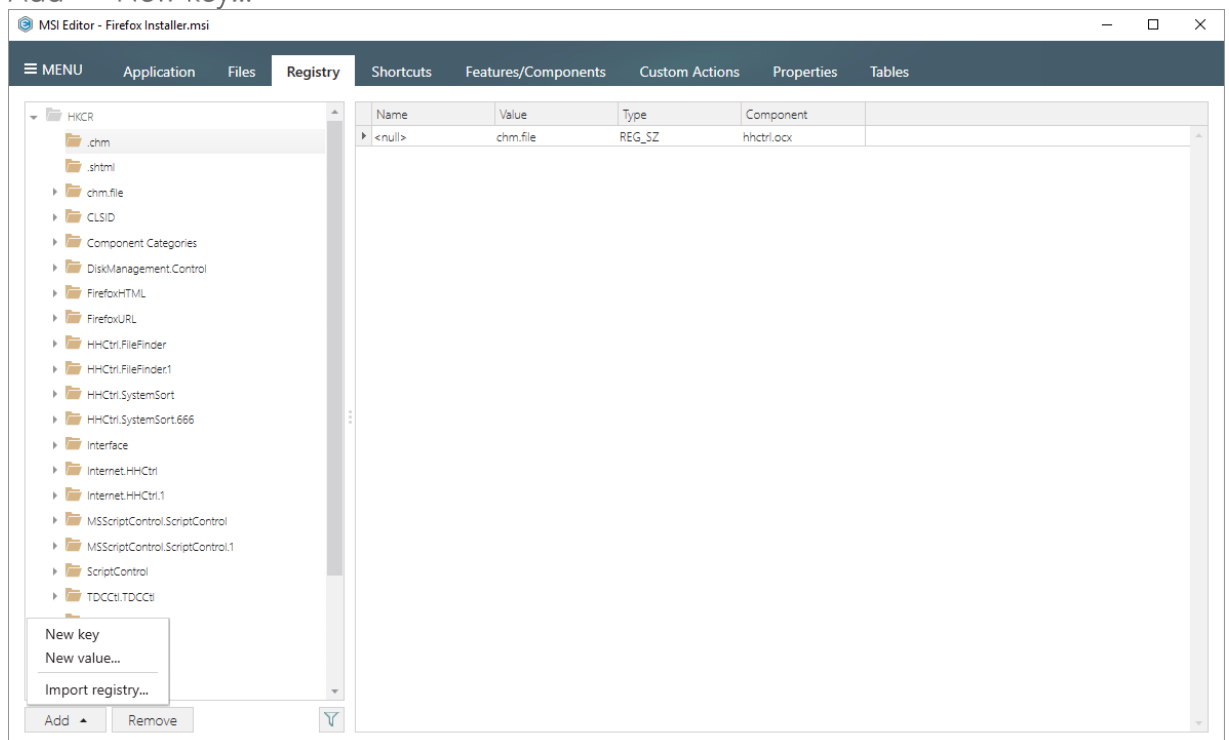
- **Add Registry Key**, described in section 3.7.3.1
Add a new registry key or sub-key manually.
- **Add Registry Value**, described in section 3.7.3.2
Add a new registry value manually.
- **Import Registry**, described in section 3.7.3.3
Import registry entries to your package from the REG files.
- **Export Registry**, described in section 3.7.3.4
Export the selected registry entries to the REG file.

3.7.3.1 Add Registry Key

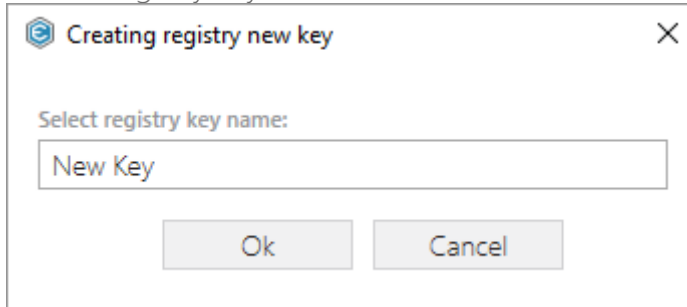
[1]. Open the Registry tab.



[2]. Select a key in the registry Tree, to which you want to add a new registry key, and click Add -> New key...

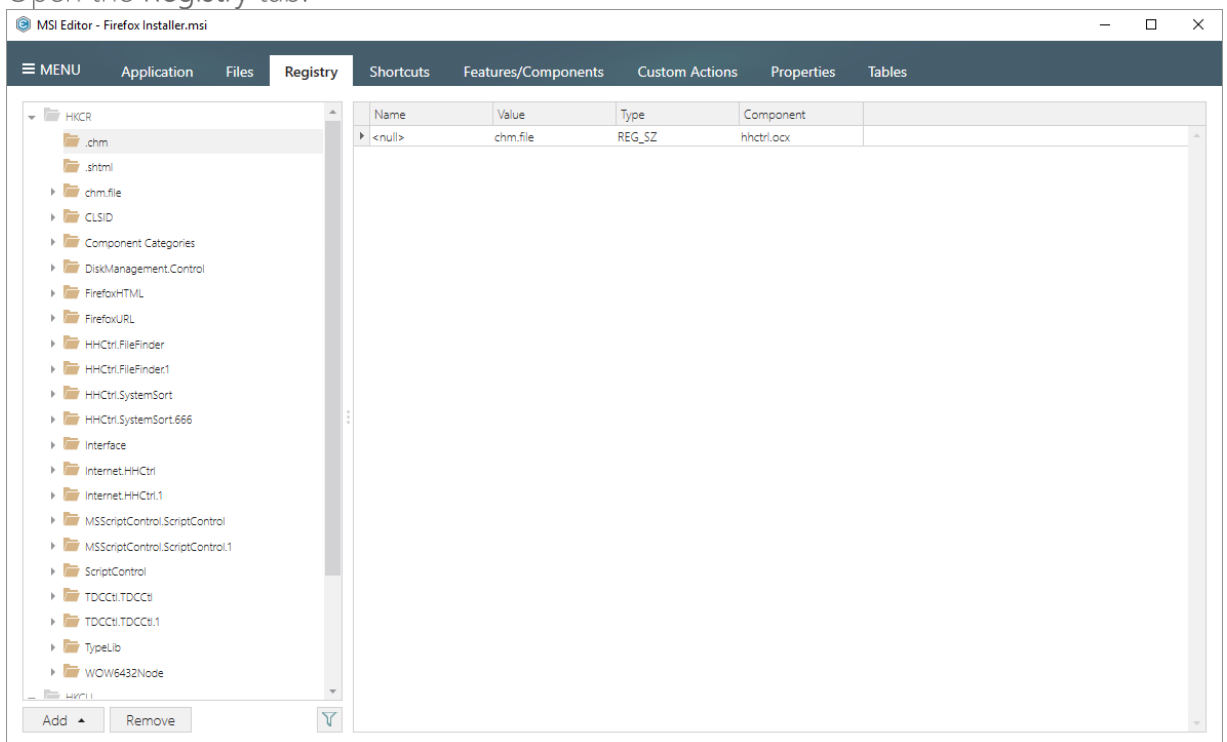


- [3]. Enter a registry key name and click Ok.

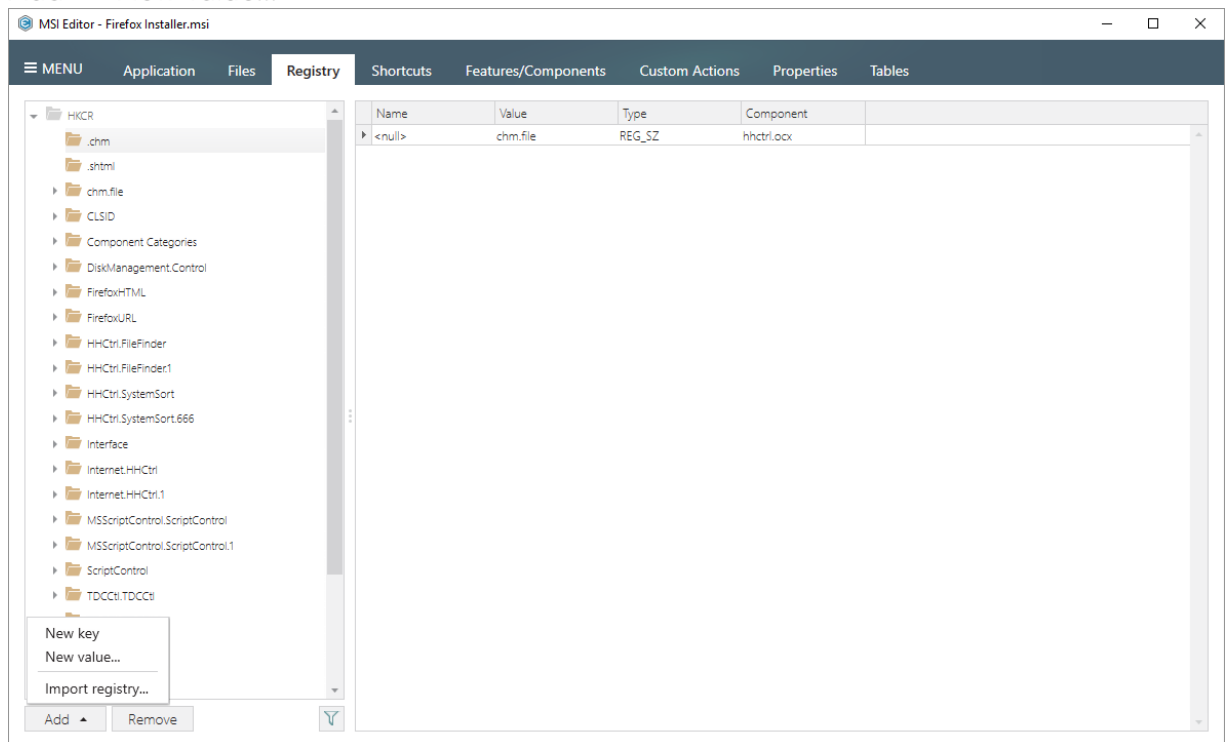


3.7.3.2 Add Registry Value

- [1]. Open the Registry tab.



- [2]. Select a key in the registry Tree, to which you want to add a new registry value, and click Add -> New value...



- [3]. Enter a registry value name, select a registry type and choose one of components, to which your new registry value will be assigned. Click Add to create the registry value.

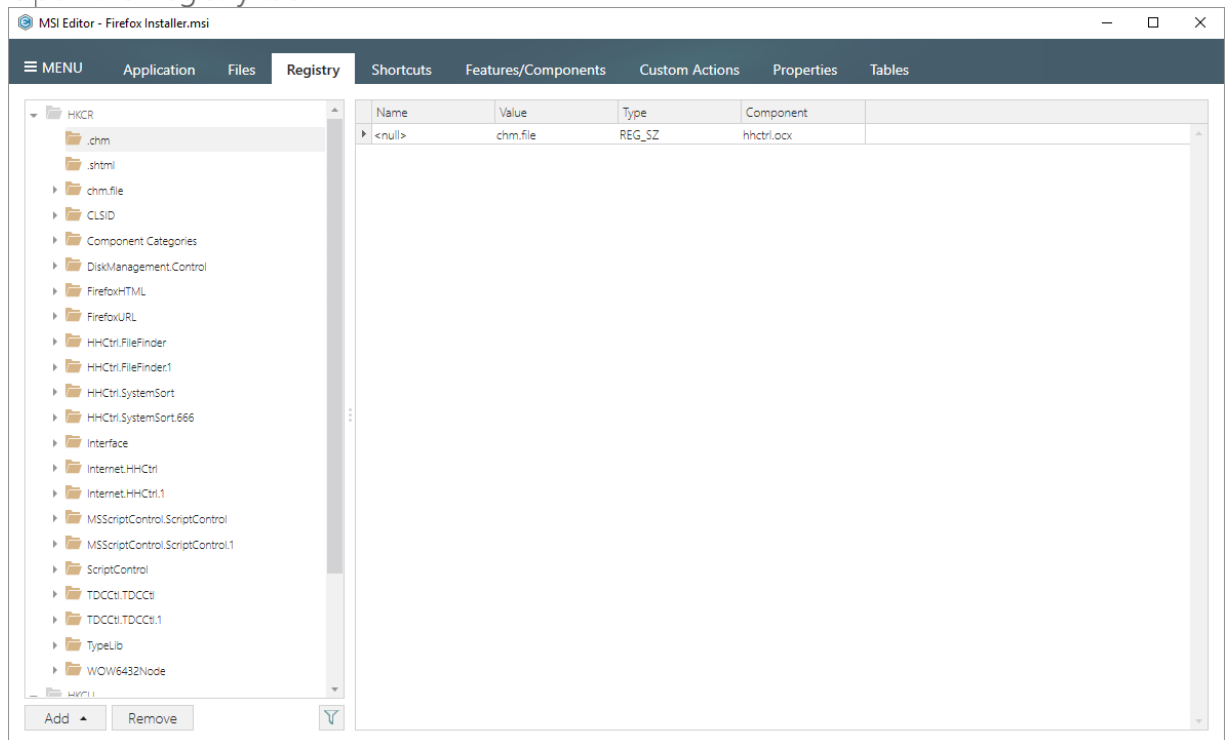
The 'Add value' dialog box is shown. It has the following fields:

- Name:** A text input field.
- Type:** A dropdown menu with 'REG_SZ' selected.
- Value:** A large text input area.
- Component:** A dropdown menu with a warning icon and a blue checkmark.

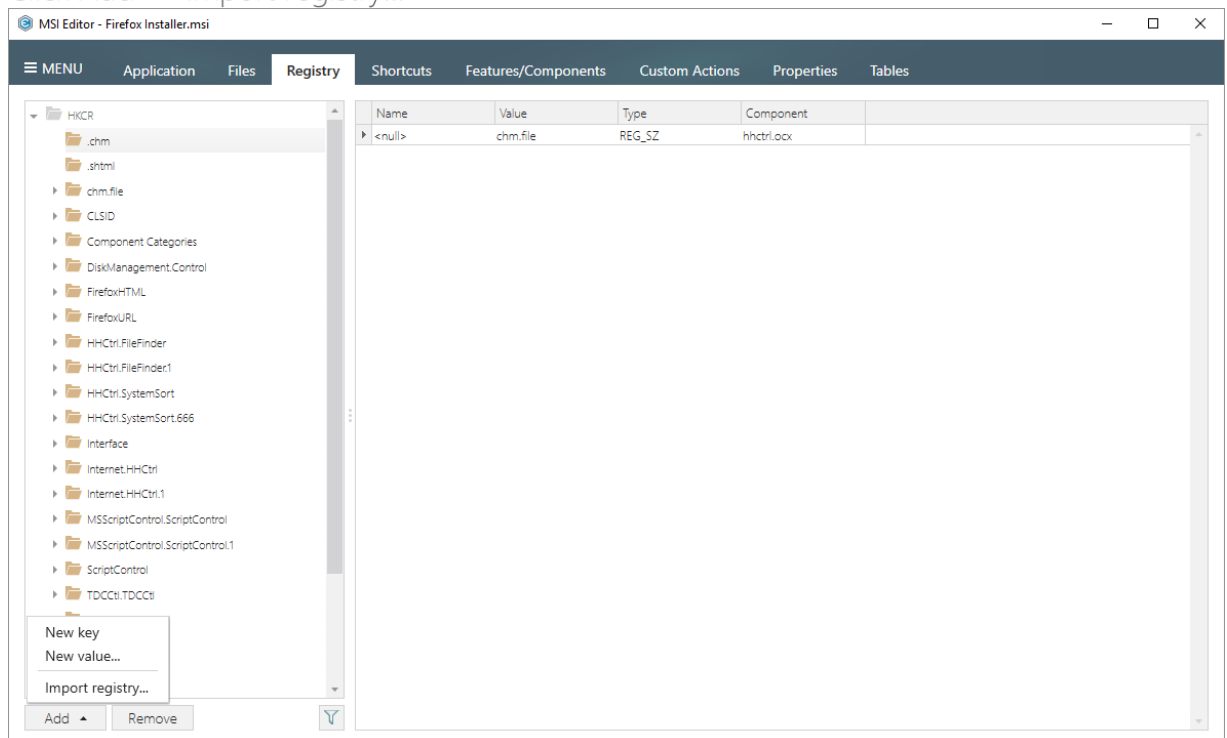
At the bottom, there are 'Add' and 'Cancel' buttons.

3.7.3.3 Import Registry

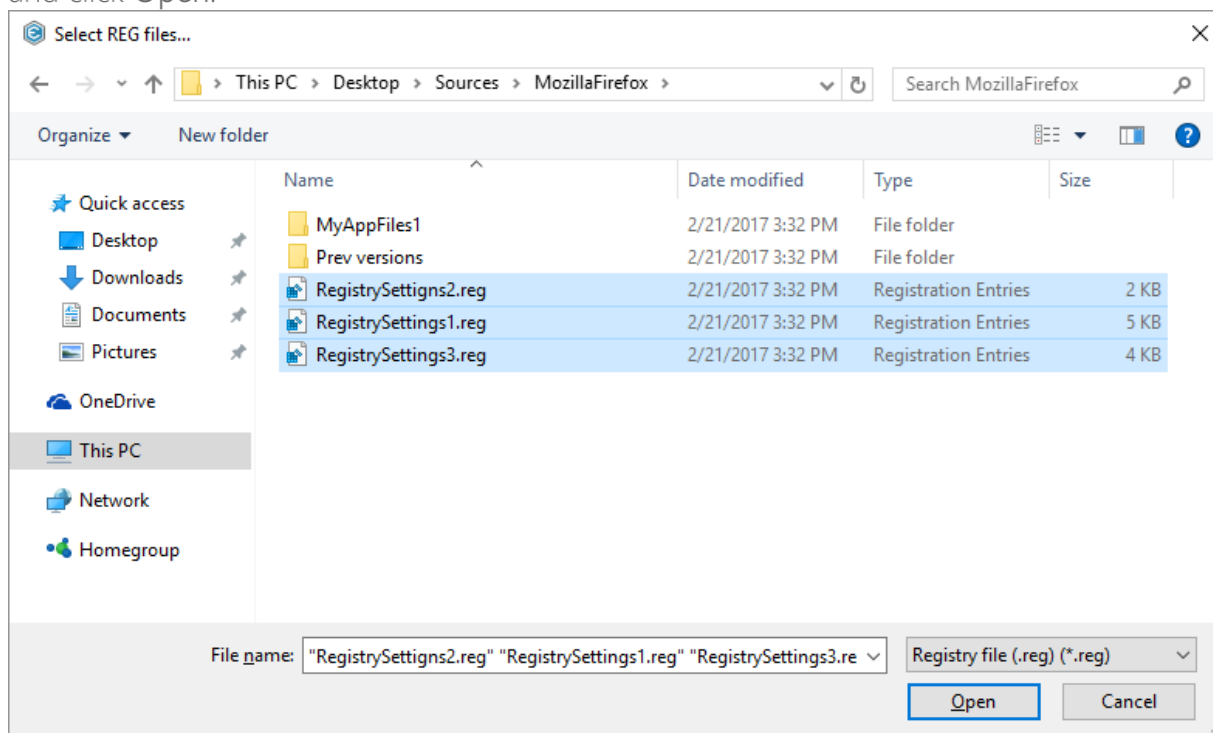
[1]. Open the Registry tab.



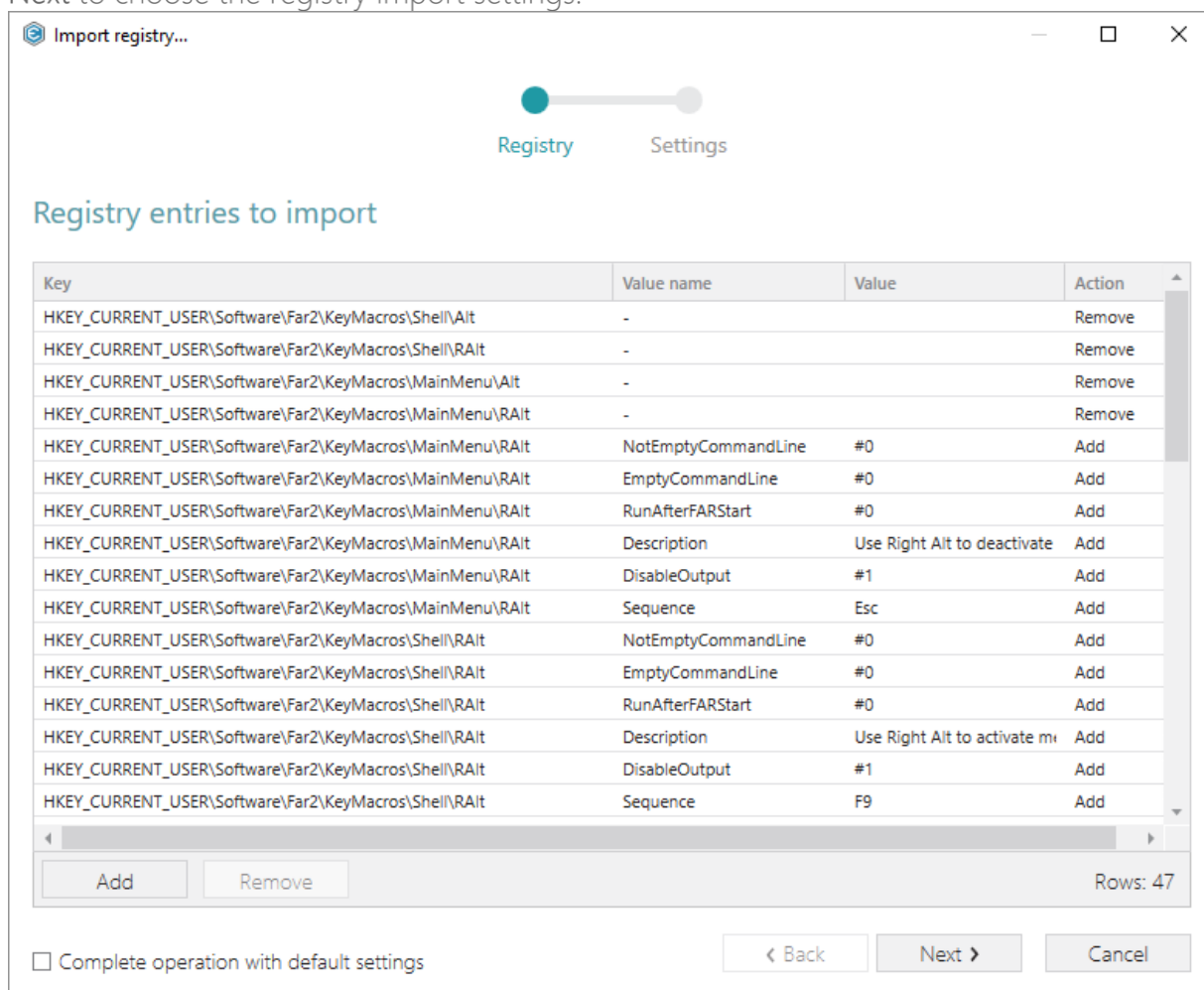
[2]. Click Add -> Import registry...



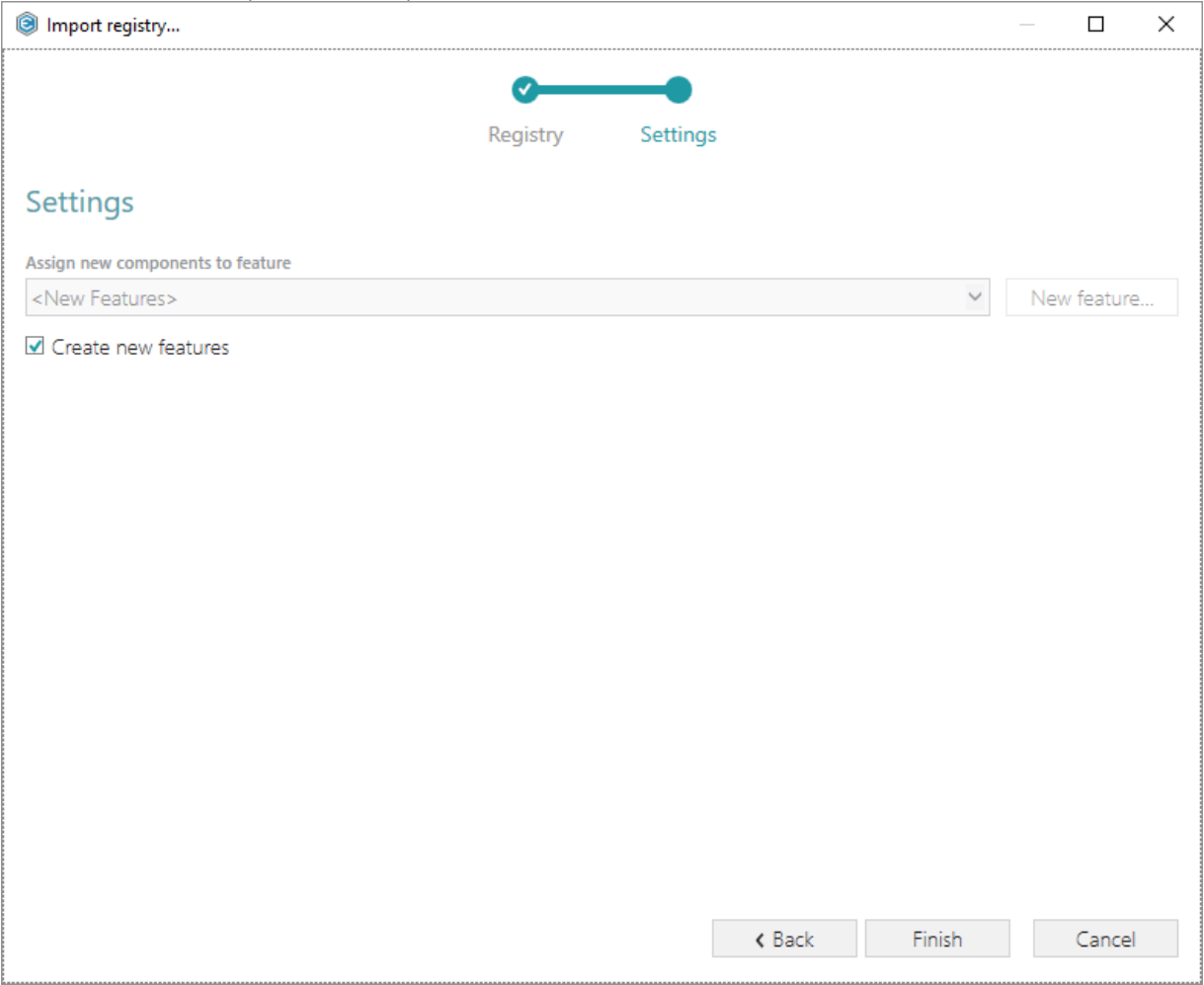
- [3]. Choose REG files from your file system you want to import to the opened MSI package and click Open.



- [4]. Review, add more or remove registry entries, read from the selected REG files and click Next to choose the registry import settings.



- [5]. At this step, you can select an MSI Feature, to which component with registry entries will be assigned. Below, in the tables, you will find the detailed description of these settings. Click Finish to complete the import.



Feature settings

Create new features

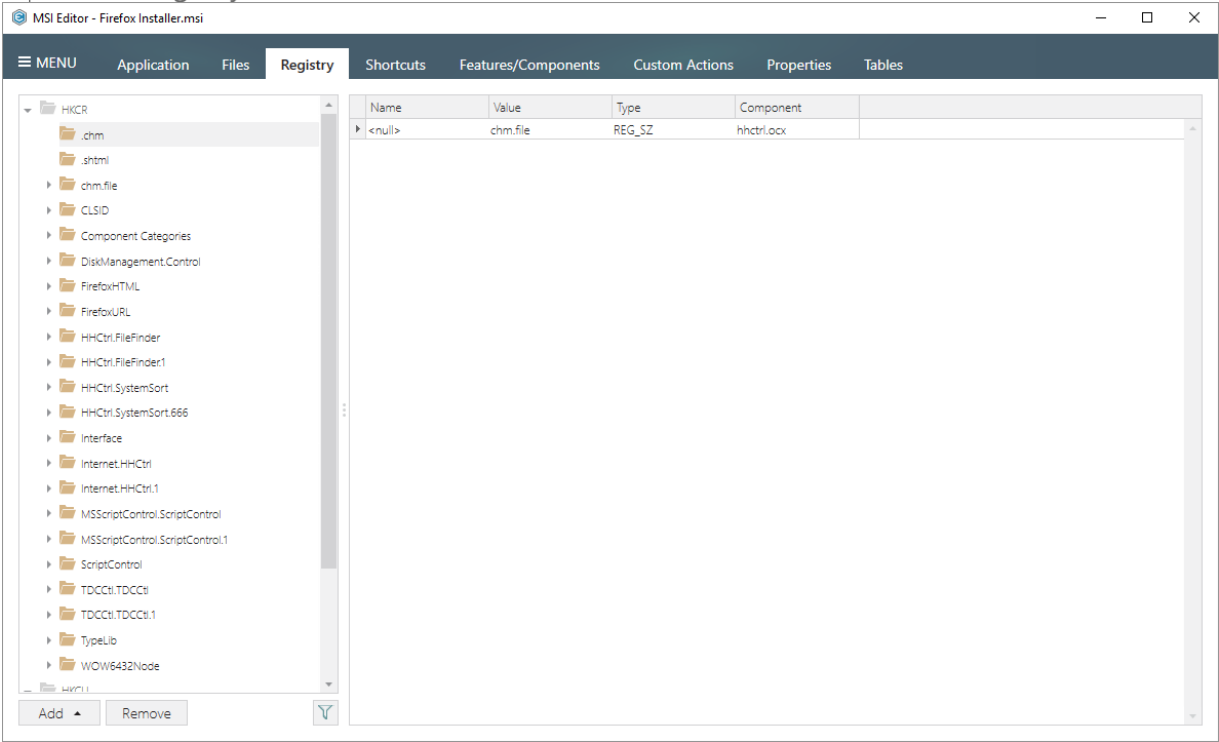
The "PACE_Complete" feature will be created (or used if exists) for keeping components with the per-machine registry entries, and the "PACE_UserPart" feature will be created (or used if exists) for keeping components with the per-user registry entries. The created "PACE_Complete" feature will be set as a child feature of the "PACE_UserPart" one if it exists, and the created "PACE_UserPart" feature will be set as a parent feature of the "PACE_Complete" one, if it exists.

<a feature, selected from the list>

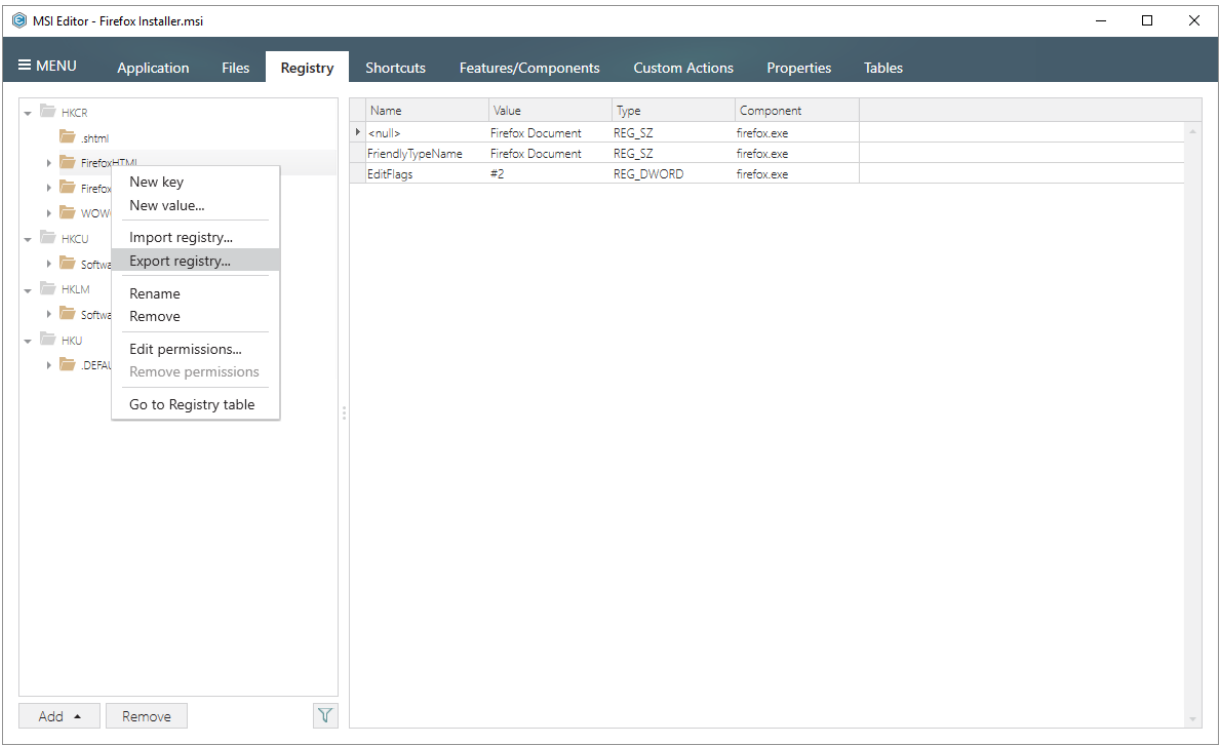
Components with the imported registry entries will be assigned to a feature, selected from the list.

3.7.3.4 Export Registry

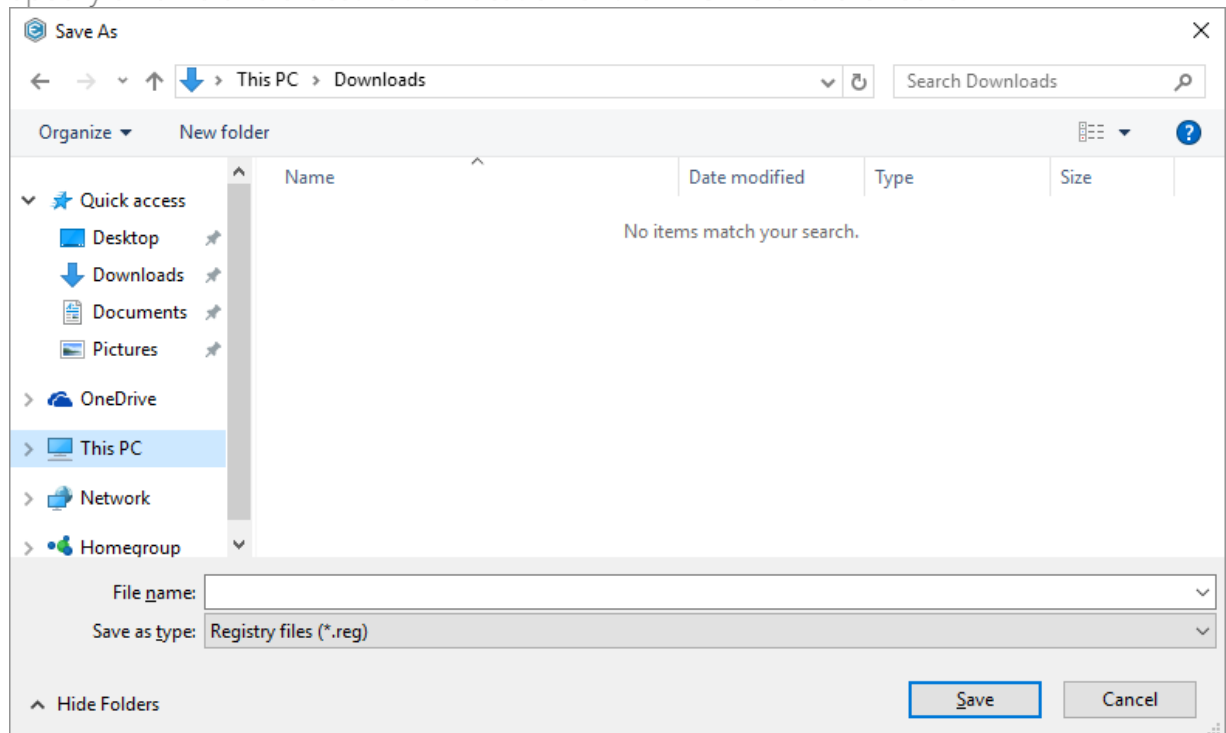
[1]. Open the Registry tab.



[2]. Select Export registry... from the context menu of a registry key, which you want to export to the REG file.



[3]. Specify a name and a destination location of the REG file and click **Save**.



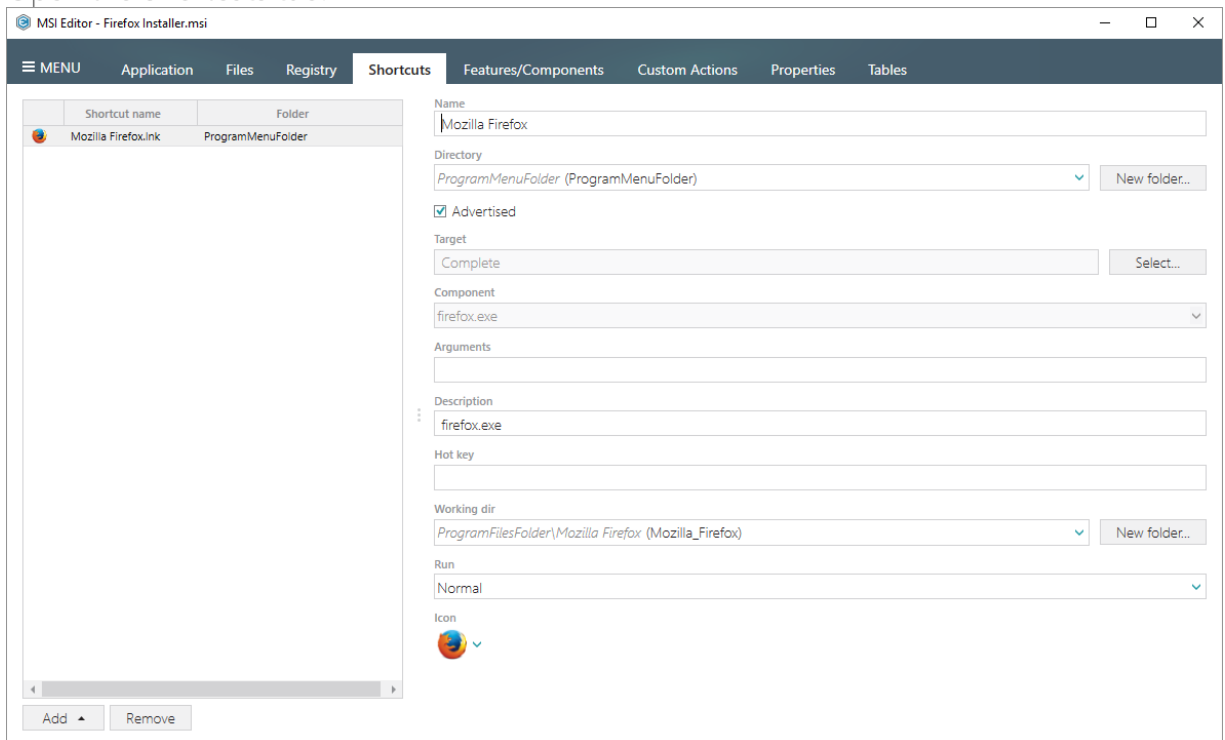
3.7.4 Shortcuts

Choose a scenario that better suits your needs:

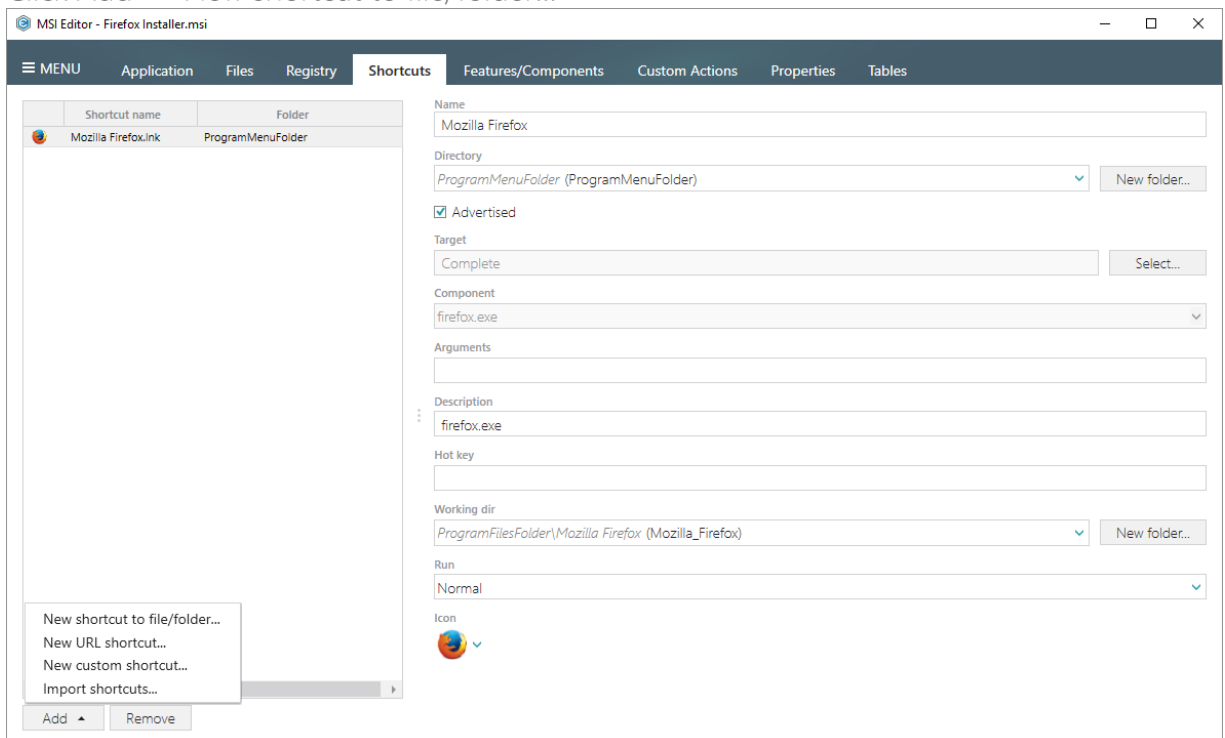
- Add Shortcut to File or Folder, described in section 3.7.4.1
Add regular or advertised shortcut that points to a file or a folder inside the package.
- Add URL Shortcut, described in section 3.7.4.2
Add the URL shortcut to your package just typing an address.
- Import Shortcuts, described in section 3.7.4.3
Import LNK and URL shortcuts from the file system to the package.

3.7.4.1 Add Shortcut to File or Folder

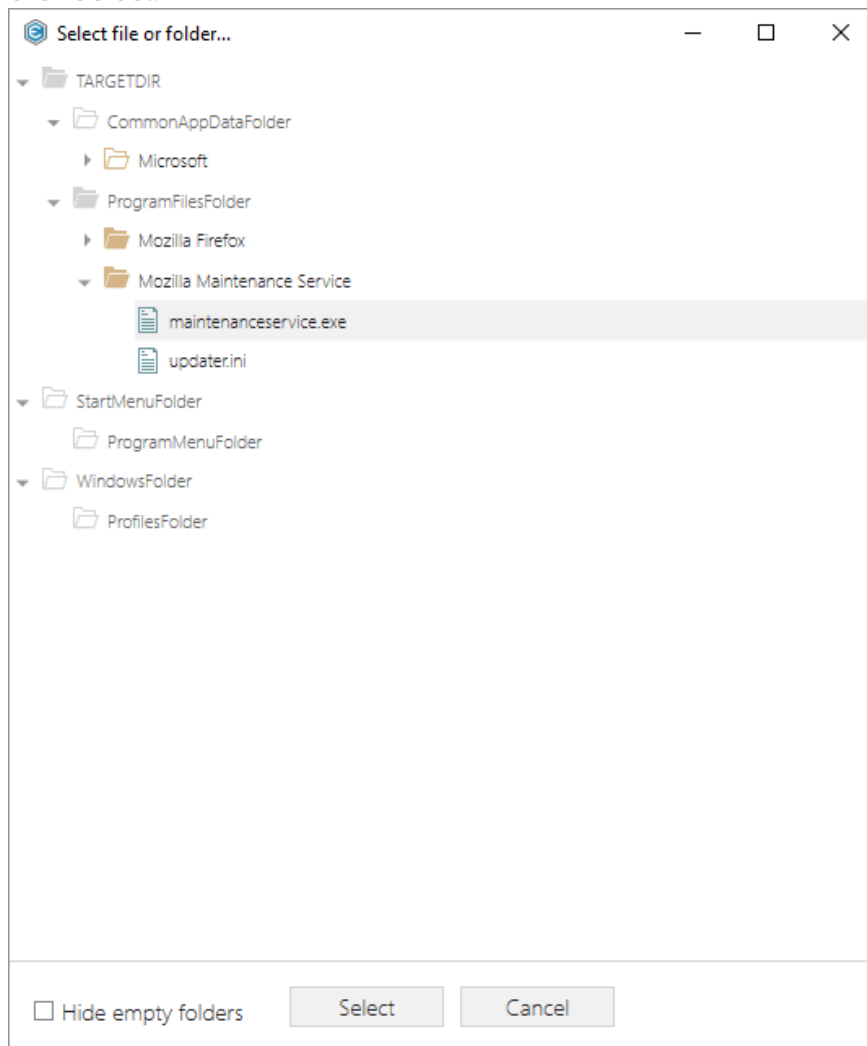
[1]. Open the Shortcuts tab.



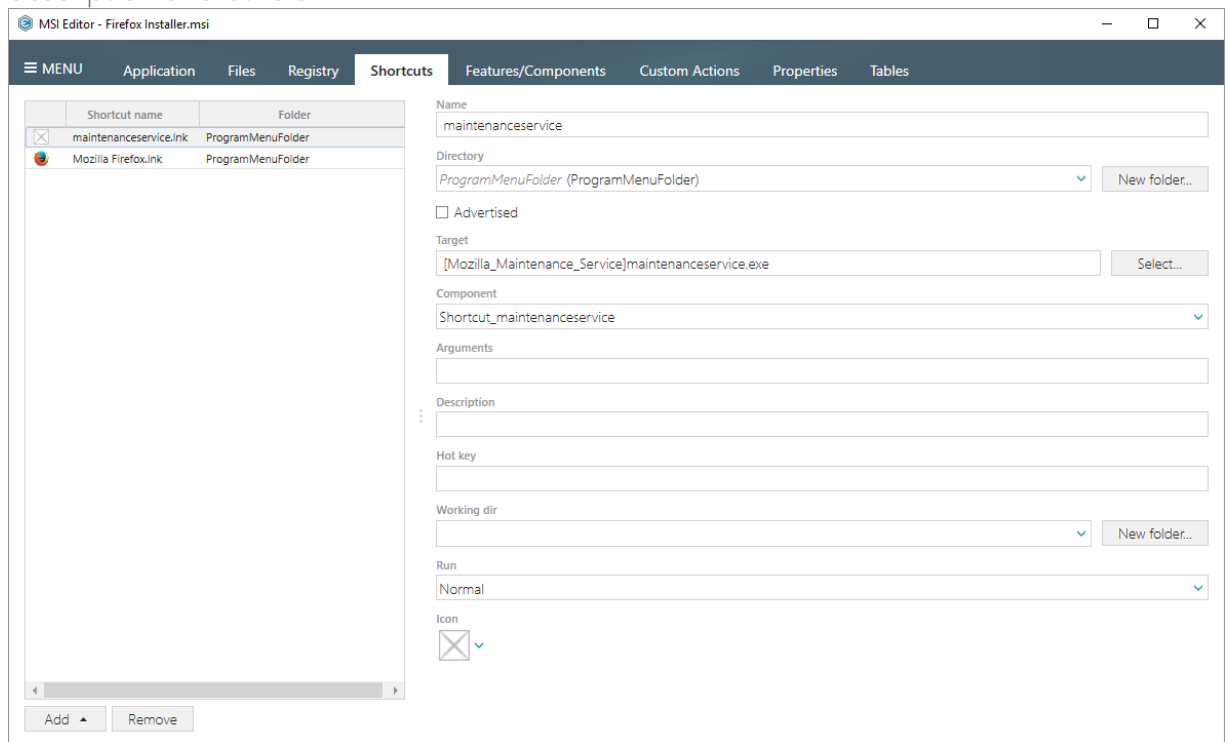
[2]. Click Add -> New shortcut to file/folder...



- [3]. Select a file or a folder from the Tree, to which you want to create an LNK shortcut and click Select.

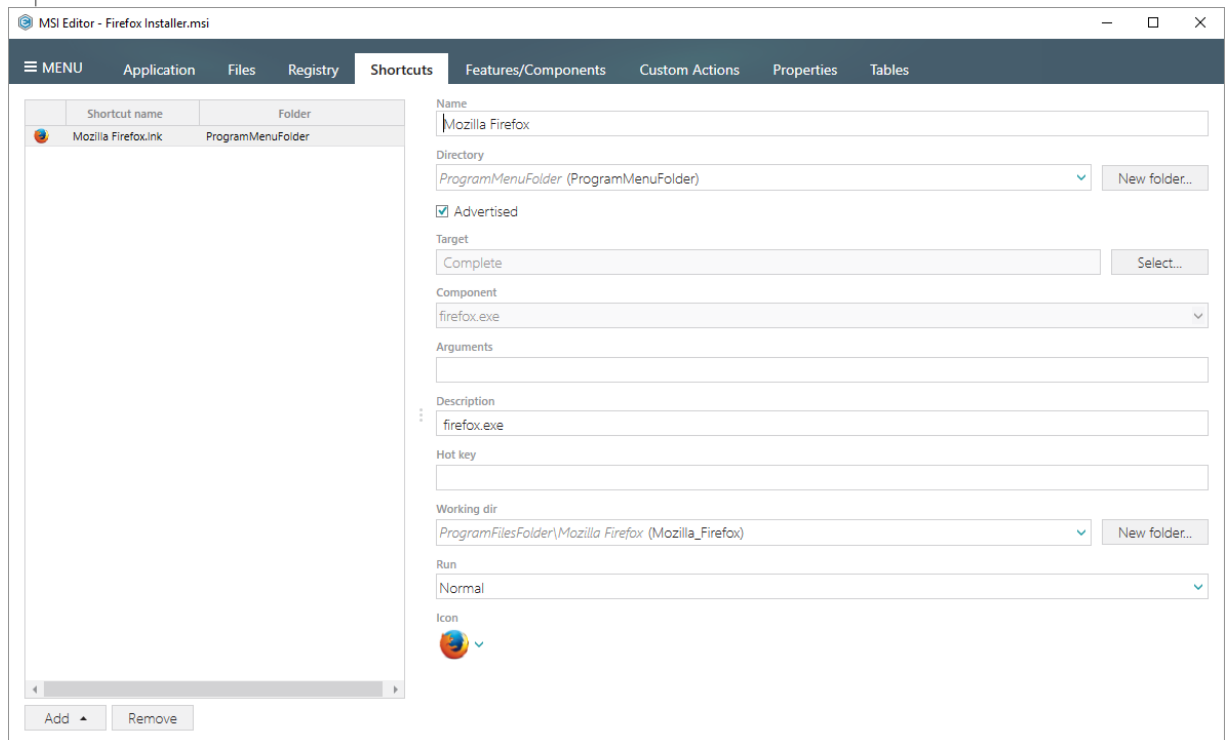


- [4]. Review and modify details of the created shortcut such as name, directory, icon, description and others.

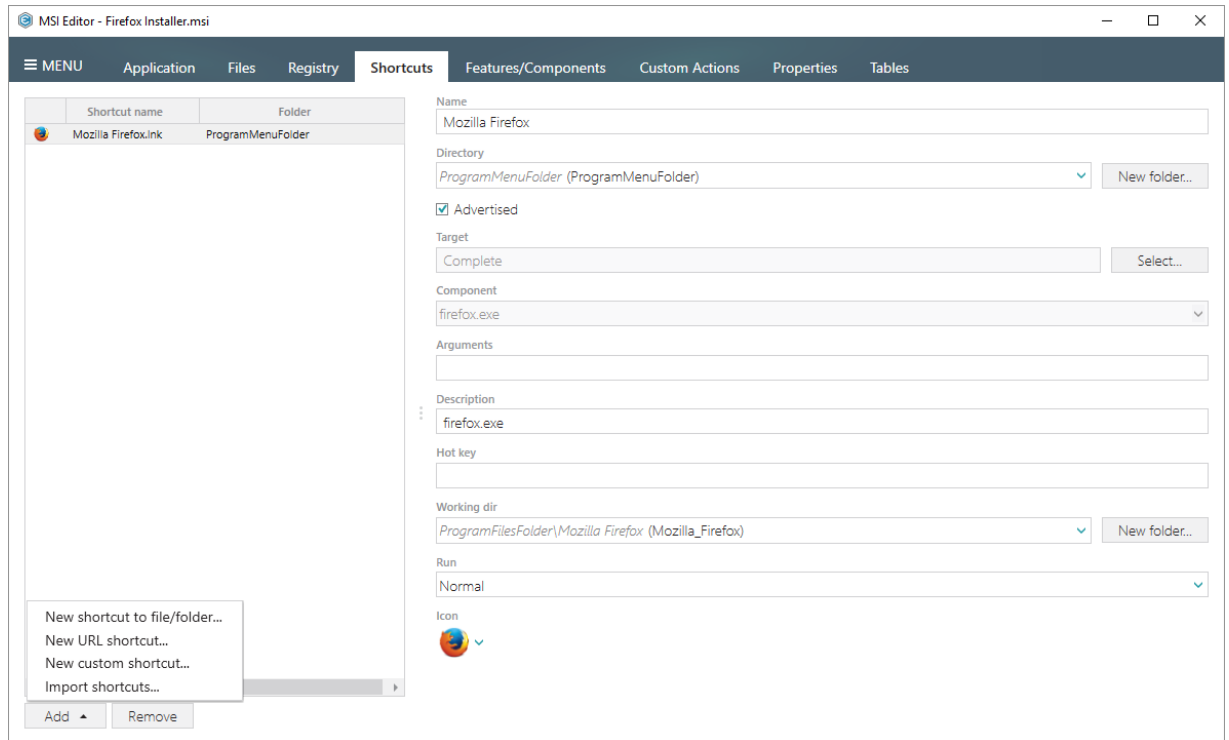


3.7.4.2 Add URL Shortcut

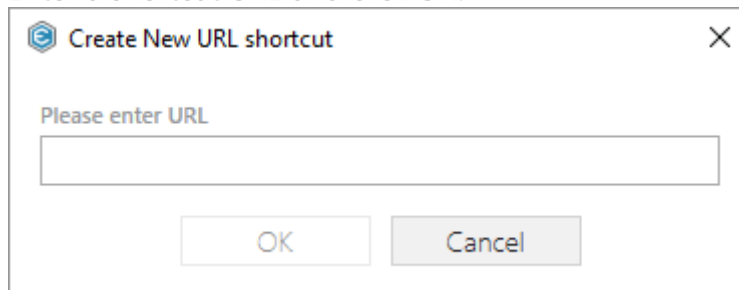
- [1]. Open the Shortcuts tab.



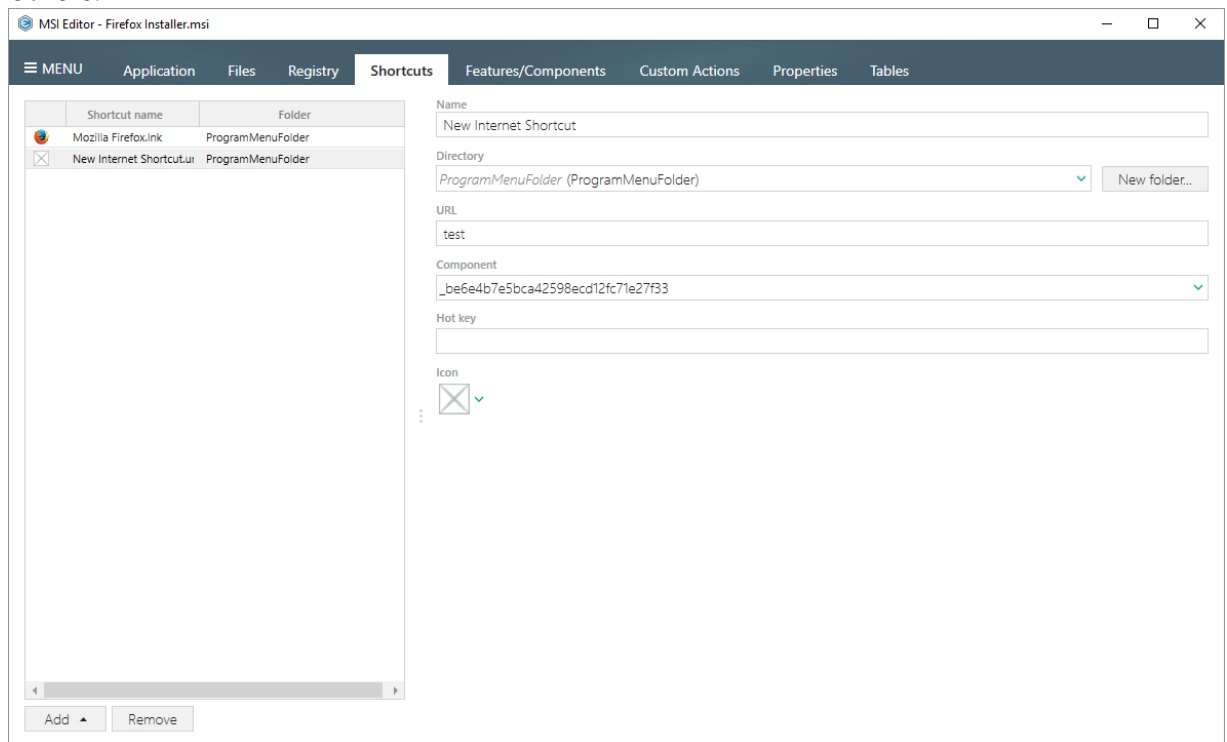
[2]. Click Add -> New URL shortcut...



[3]. Enter a shortcut URL and click OK.

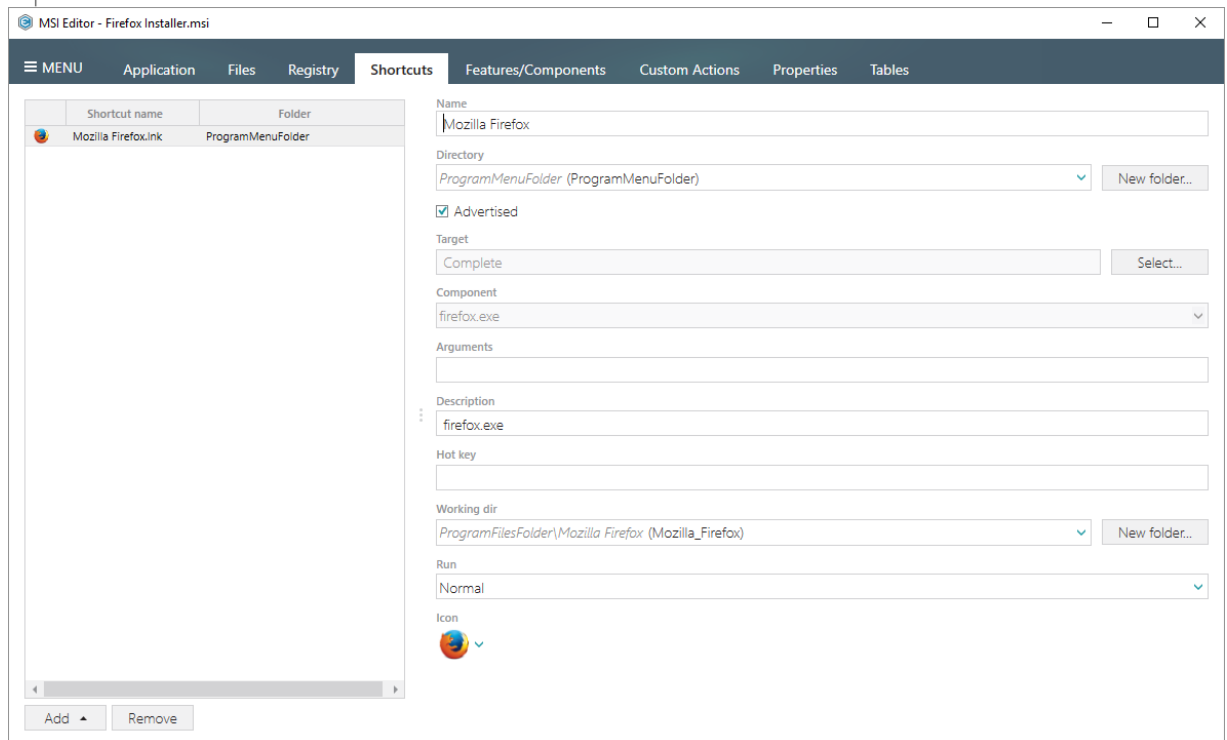


- [4]. Review and modify details of the created shortcut such as name, directory, icon, URL and others.

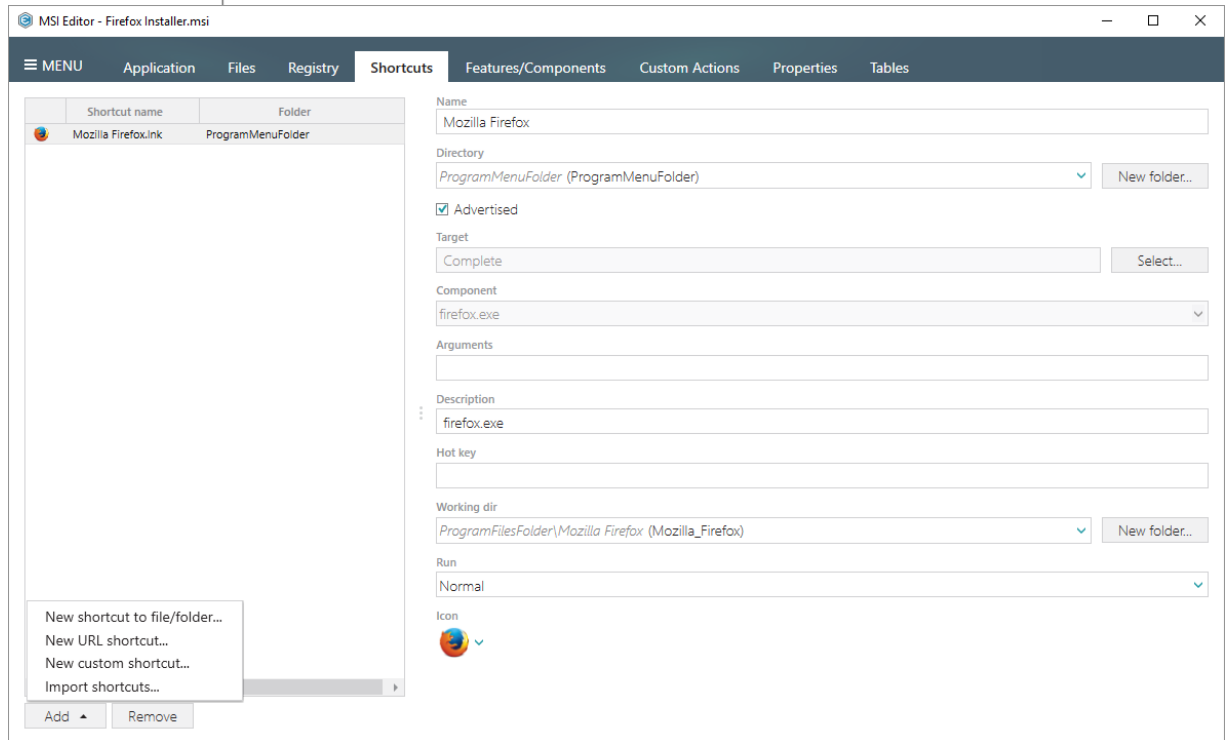


3.7.4.3 Import Shortcuts

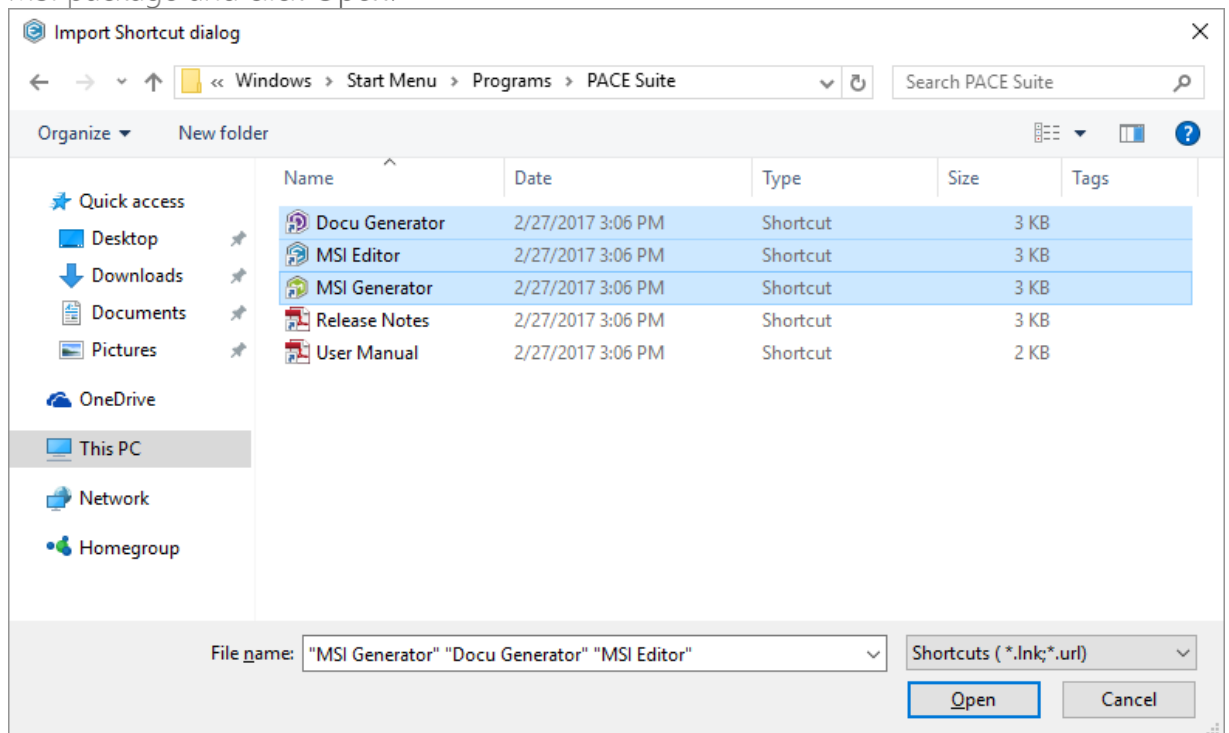
- [1]. Open the Shortcuts tab.



[2]. Click Add -> Import shortcuts...



[3]. Choose LNK and URL shortcuts from your file system you want to import to the opened MSI package and click Open.



3.7.5 Custom Actions

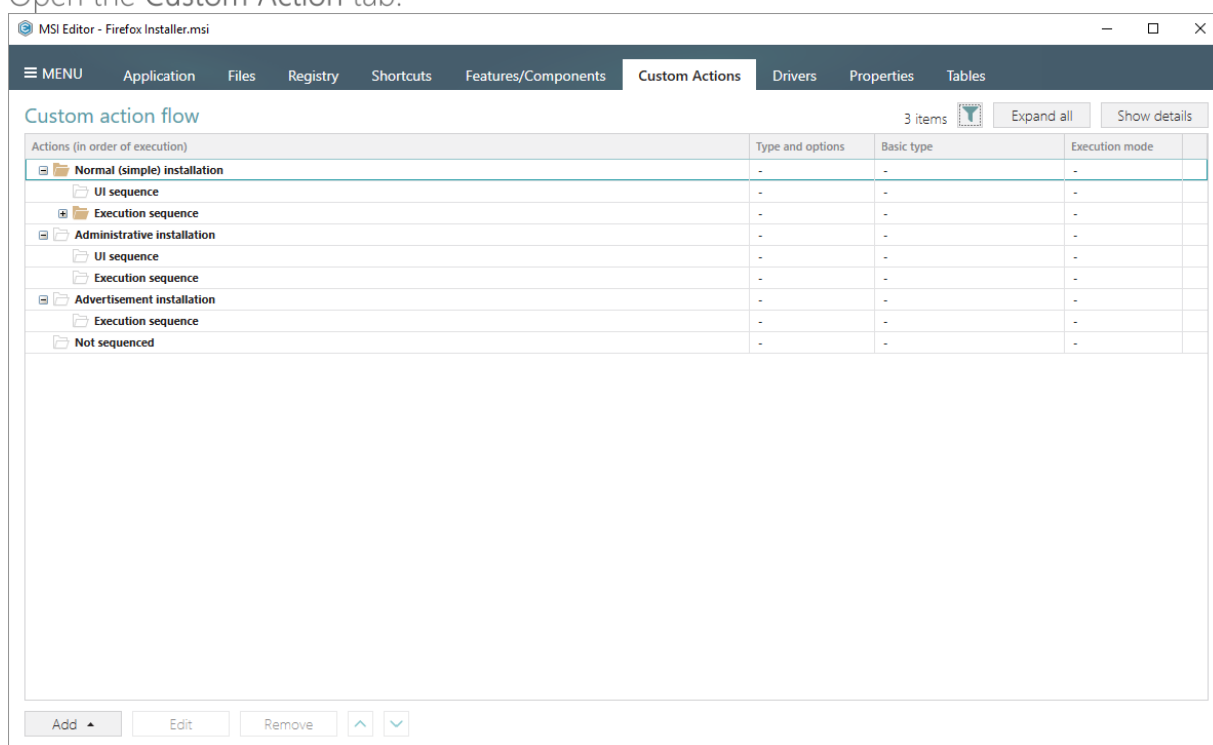
Choose a scenario that better suits your needs:


- **Add Standard Actions**, described in section 3.7.5.1
Add new standard actions to the necessary sequences.
- **Add Custom Action**, described in section 3.7.5.2
Add a new custom action to the necessary sequences with the aim of launching EXE, calling functions from DLL, running VBScript, Jscript, setting a new property value, folder path, and showing an error message.
- **Edit Custom Action**, described in section 3.7.5.3
Edit basic type, resources, sequence and other settings of the existing custom action.

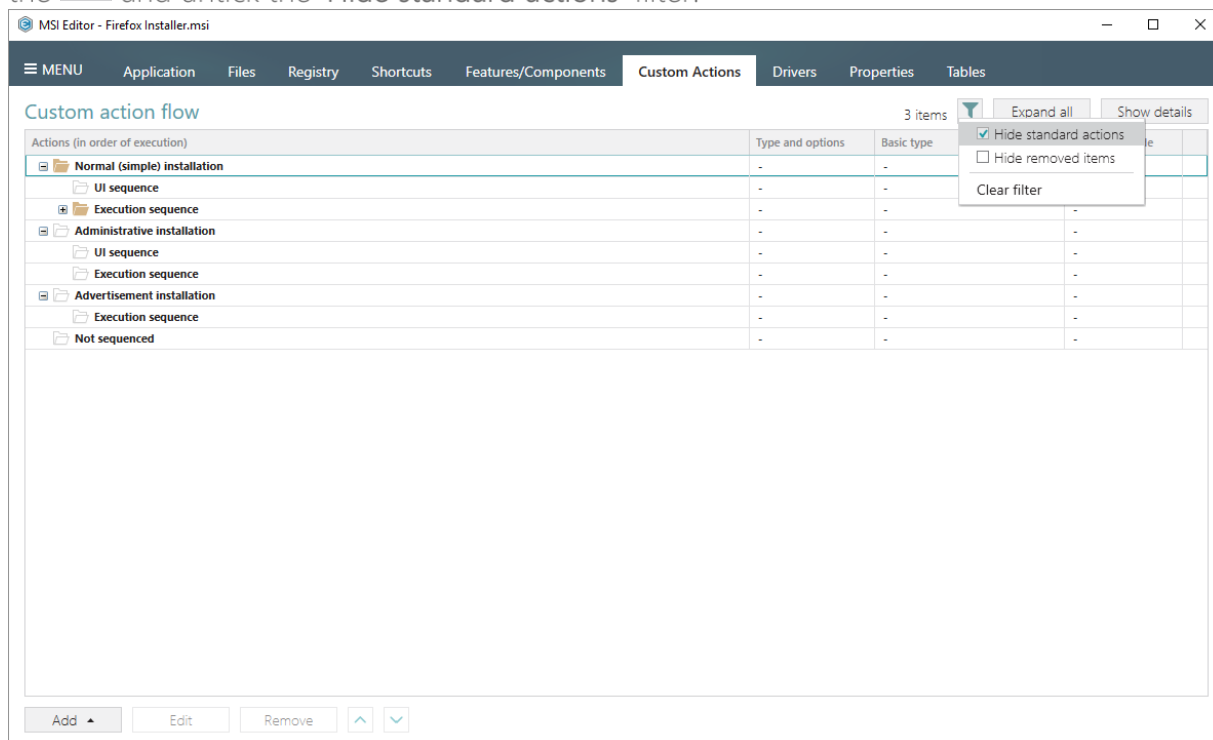
3.7.5.1 Add Standard Actions

Add new standard actions to the necessary sequences of the opened package.

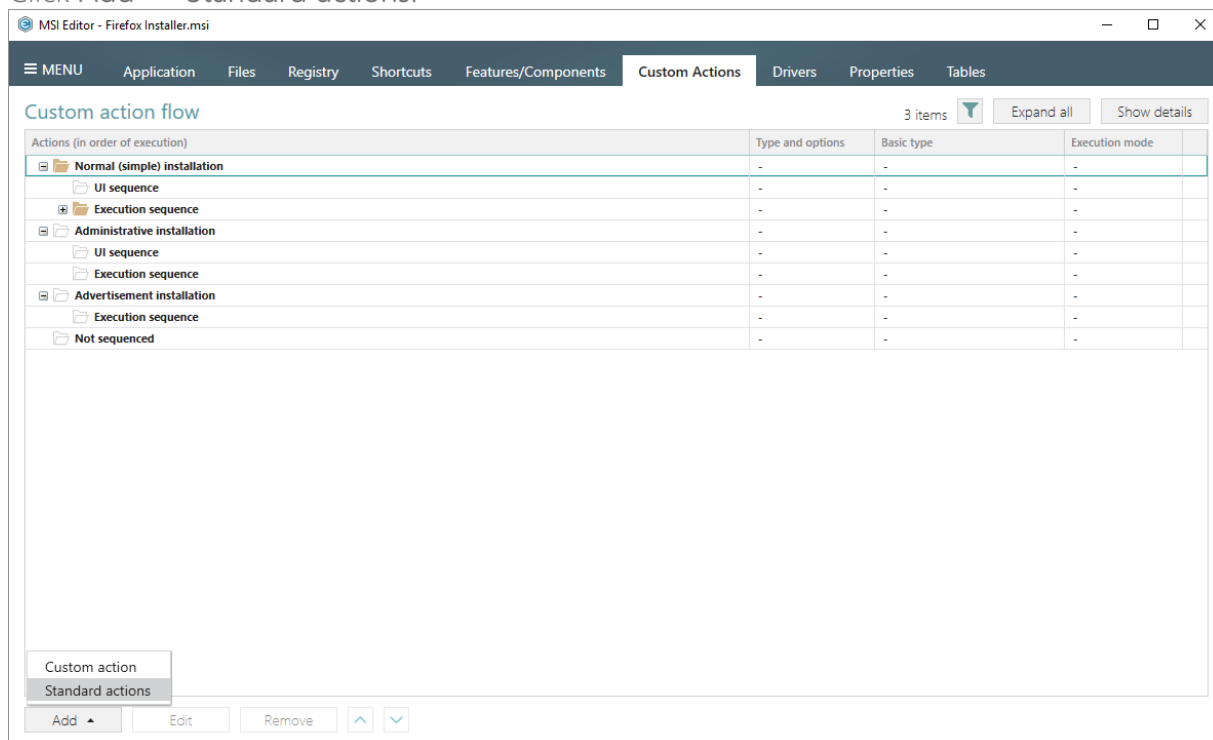
[1]. Open the Custom Action tab.



- [2]. (Optional) To review the existing standard actions, which are hidden by default, click on the  and untick the 'Hide standard actions' filter.

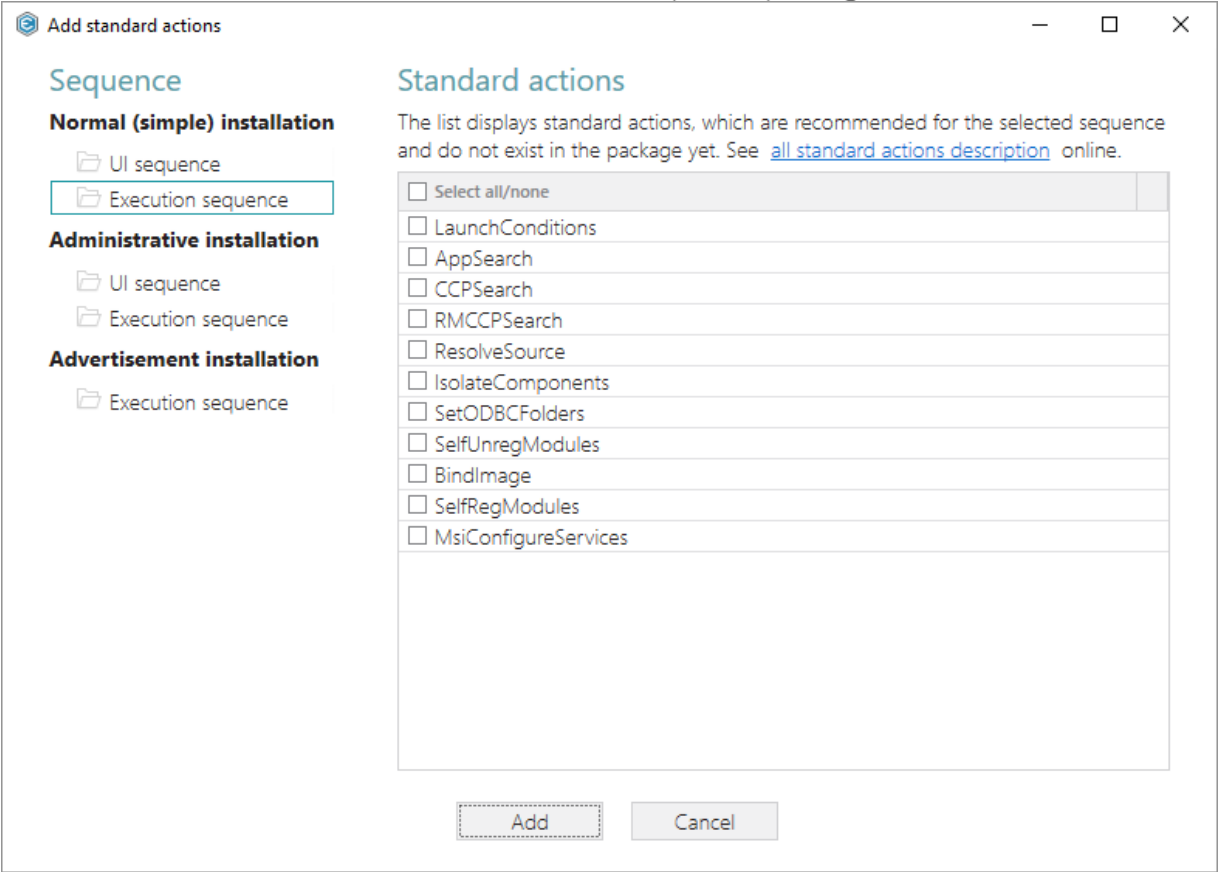


- [3]. Click Add -> Standard actions.



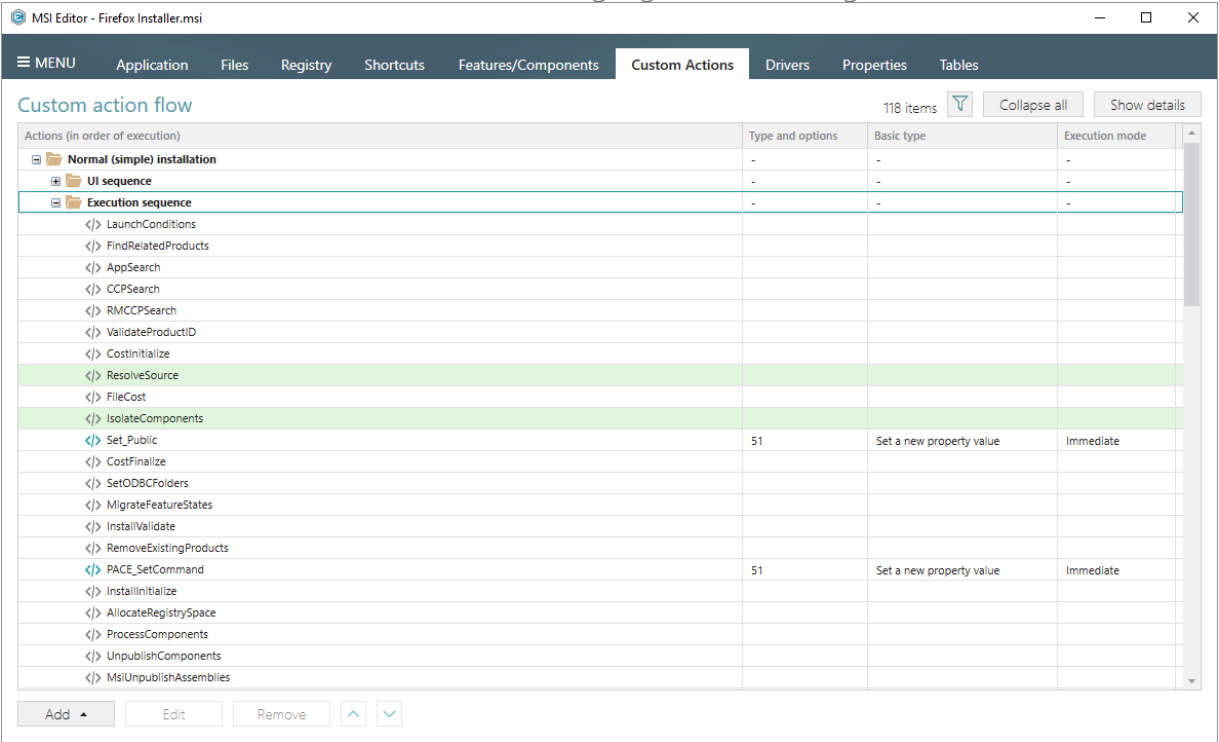
- [4]. Choose the sequence from the list on the left, select the necessary standard actions, which you want to add, and then click Add.
NOTE You may add actions to the different sequences at once. The list displays only

those standard actions, which do not exist in the opened package.



- [5]. Review the added standard actions by expanding the necessary installation modes and their sequences.

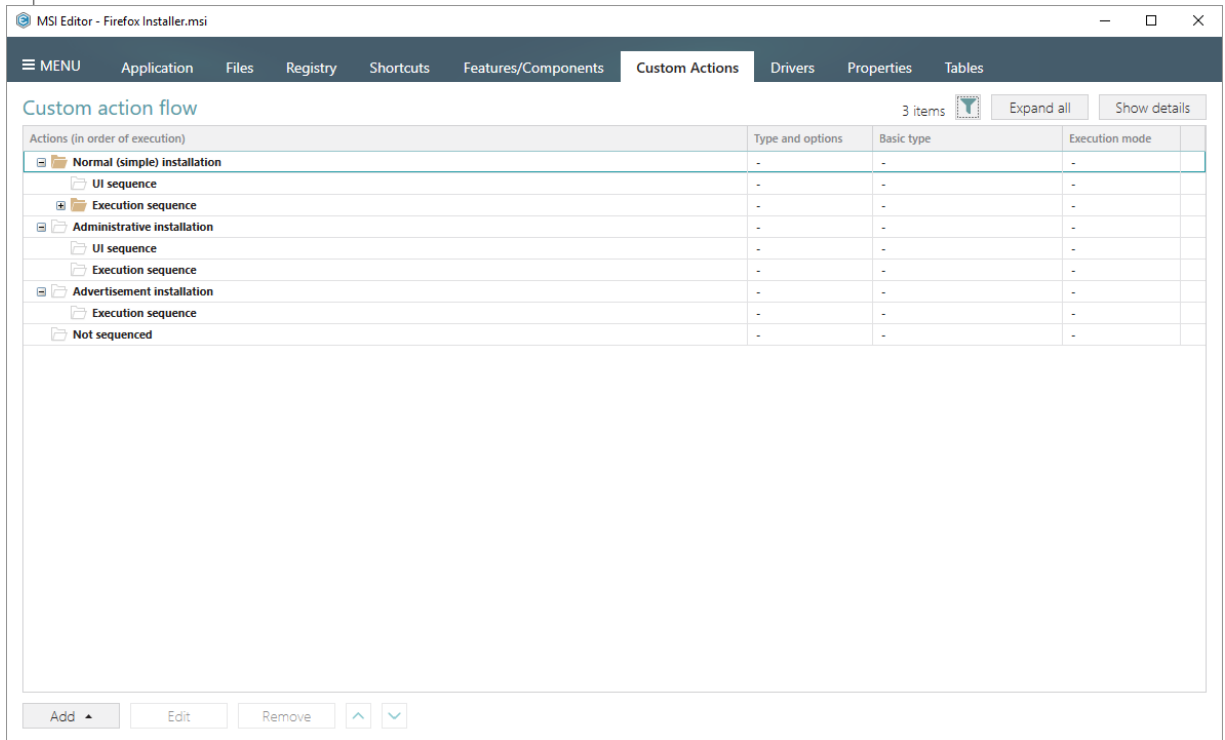
NOTE All added and modified actions are highlighted with the green color.



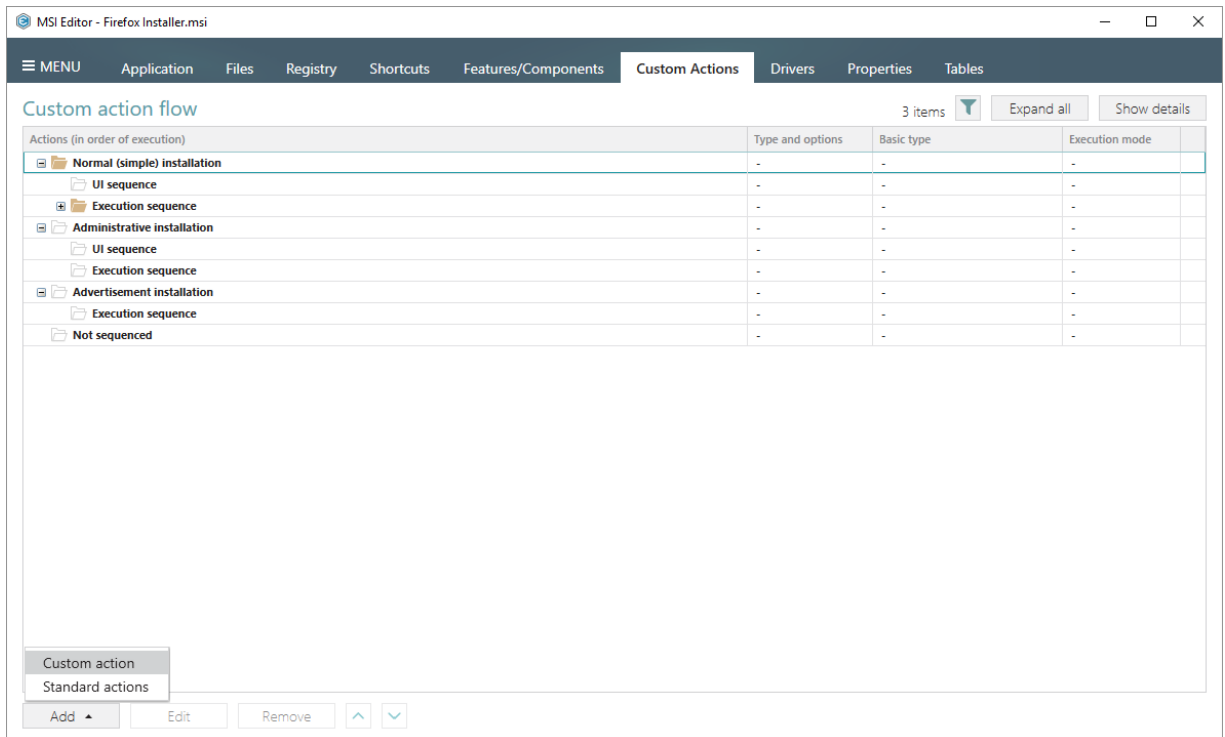
3.7.5.2 Add Custom Action

Add a new custom action to the necessary sequences with the aim of launching EXE, calling functions from DLL, running VBScript, Jscript, setting a new property value, folder path, and showing an error message.

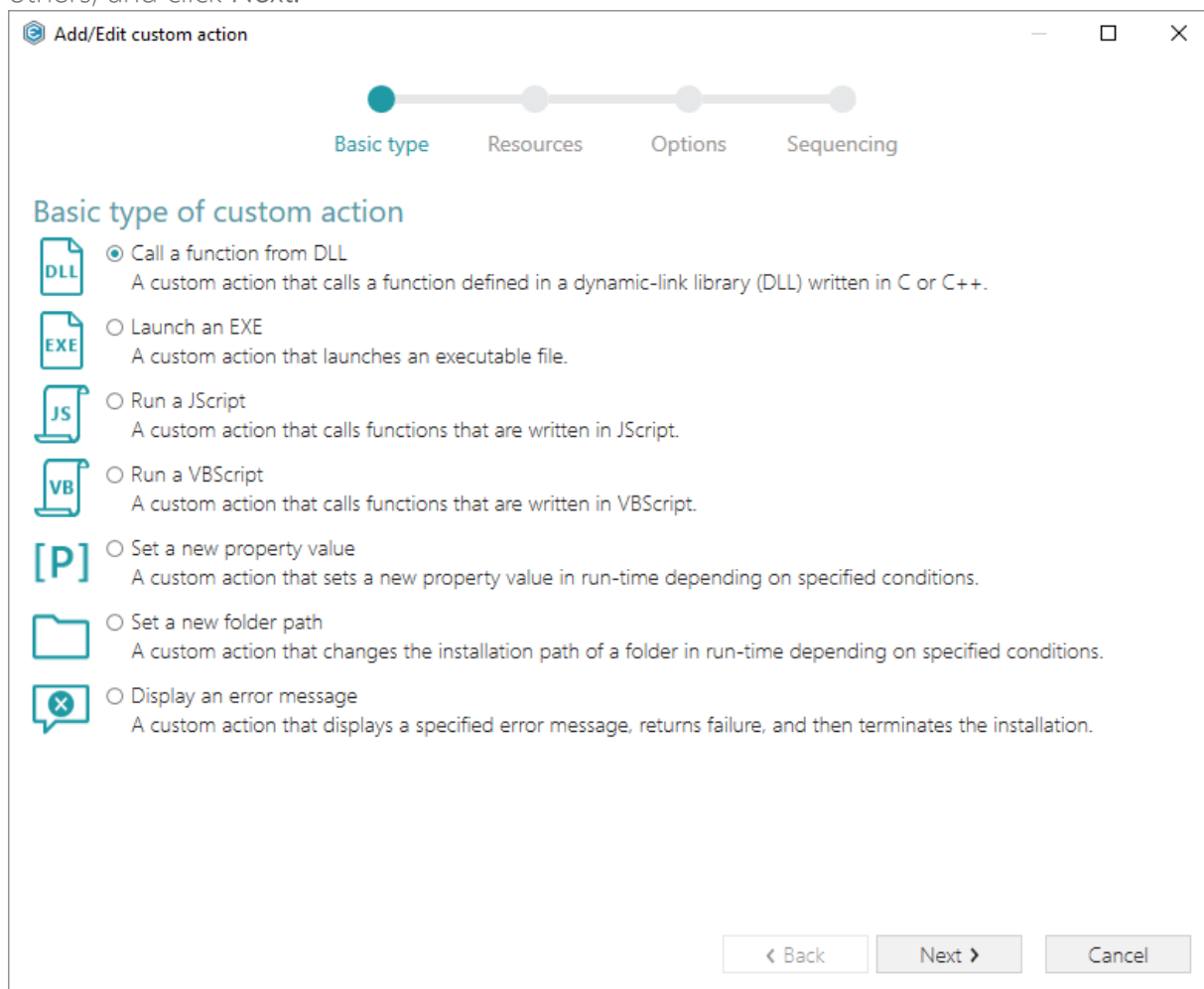
- [1]. Open the Custom Action tab.



- [2]. Click Add -> Custom action.



- [3]. Select a basic type of the custom action, like launching an EXE, running a script and others, and click Next.



- [4]. Specify the custom action resources, choosing the most appropriate type of source for your action and entering the necessary arguments. Then, click **Next**.
- NOTE The wizard displays only compatible fields and options for the previously selected

custom action basic type.

Add/Edit custom action

Basic type Resources Options Sequencing

Call a function from DLL

☒ Stored in the temporary binary stream

Binary

✕ ✓ New binary

☐ Installed by this package along with this application

File

Browse...

DLL entry point

Entry function

✕

NOTE The DLL is called through the entry point, passing a single argument that is the handle to the current install session. The specified entry point name must match that exported from the DLL. Note that if the entry function is not specified by a .DEF file or by a /EXPORT: linker specification, the name may have a leading underscore and a "@4" suffix. The called function must specify the __stdcall calling convention.

< Back Next > Cancel

- [5]. Specify a name of your custom action, select one of the execution modes (Immediate, Deferred, Rollback and Commit), choose the execution context, scheduling, return processing and other options. Then, click **Next**.

NOTE All options that are incompatible with the previously selected settings are

disabled.

Add/Edit custom action

Basic type Resources **Options** Sequencing

Identification

Action name
CA_DLL_libEGL.dll_1

Execution and processing settings

Execution mode
Deferred (Execute the action while the system is being modified)

☒ Run in logged-on user's context
☐ Run in system context
☐ Run with user impersonation during per-machine installs on a terminal server

Scheduling option
Always execute (default)

Return processing option
A synchronous execution that fails if the exit code is not 0

☒ Write the custom action details to the log file
☐ Run JScript or VBScript in 64-bit environment

< Back Next > Cancel

- [6]. On the sequencing step, you can choose a position, where you would like to run your custom action. The sequence drop-down list allows you to select only compatible positions, taking into account your previously selected options. Also, you are free to specify execution conditions either by entering them manually or choosing from the drop-down list. Click Finish to add your custom action.

NOTE Incompatible sequences are disabled.

The screenshot shows the 'Add/Edit custom action' dialog box with the 'Sequencing' tab selected. At the top, a progress bar shows four steps: 'Basic type', 'Resources', 'Options', and 'Sequencing'. The 'Sequencing' tab is active and highlighted in blue. Below the progress bar, the 'Normal (simple) installation' section is visible. It contains two columns of settings: 'UI sequence' and 'Execution sequence (recommended)' on the left, and 'UI sequence conditions' and 'Execution sequence conditions' on the right. The 'UI sequence' dropdown is set to 'Do not run in this sequence'. The 'Execution sequence (recommended)' dropdown is set to 'Run after InstallFiles'. Below these sections, there is an 'Administrative installation' section with similar dropdowns. At the bottom of the dialog, there are three buttons: '< Back', 'Finish' (which is highlighted with a dashed border), and 'Cancel'. A note at the bottom of the 'Administrative installation' section explains that UI sequences are only processed if the user interface level is set to Reduced or Full, and that the advertisement installation sequence is not present on this step.

Add/Edit custom action

Basic type Resources Options **Sequencing**

Normal (simple) installation

UI sequence: Do not run in this sequence

Execution sequence (recommended): Run after InstallFiles

UI sequence conditions:

Execution sequence conditions:

Administrative installation

UI sequence: Do not run in this sequence

Execution sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence conditions:

NOTE The UI sequences, which typically contain standard actions related to collecting system information, are only processed if the user interface level is set to Reduced or Full; and, respectively are skipped if level is set to basic UI or no UI.

An administrative installation is typically initiated by a network administrator to assign and install applications for individual users and groups of users.

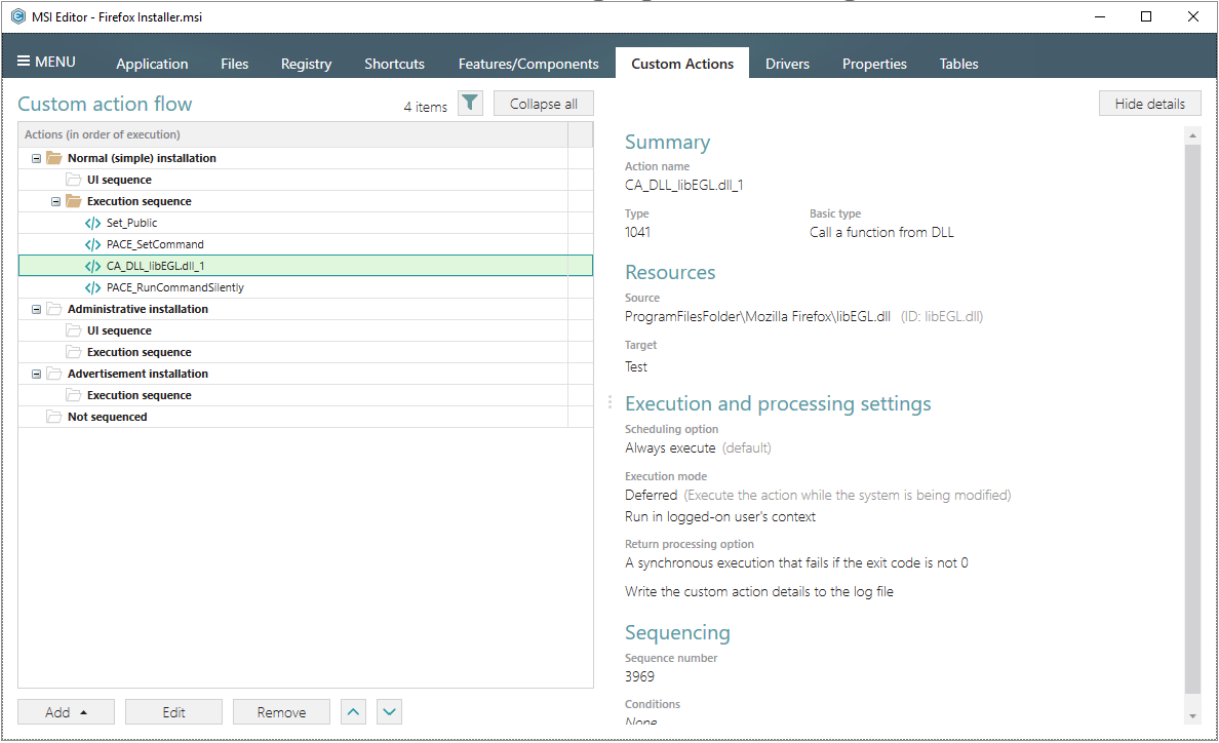
The advertisement installation sequence is not present on this step because it cannot be used for custom actions.

For information on the sequence conditions, see [Conditional Statement Syntax online](#).

< Back Finish Cancel

- [7]. The first occurrence of the added custom action will be automatically selected. Click **Show details** to review all custom action details.

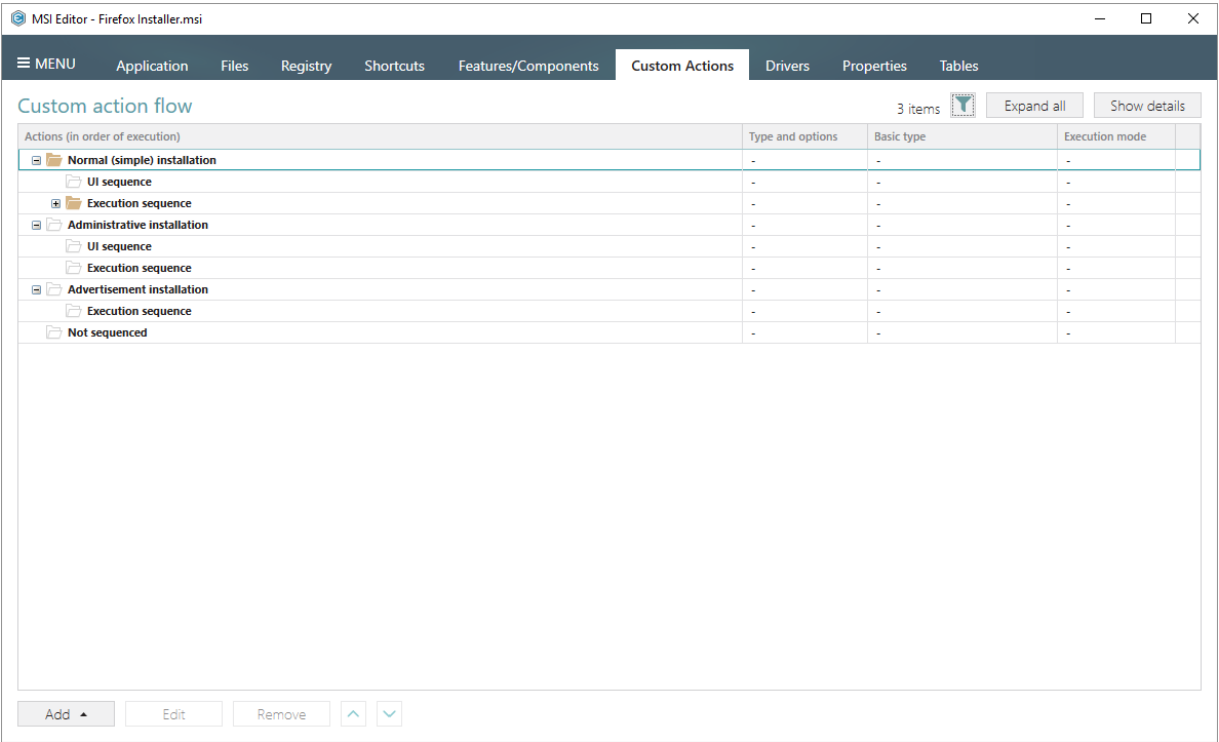
NOTE All added and modified actions are highlighted with the green color.



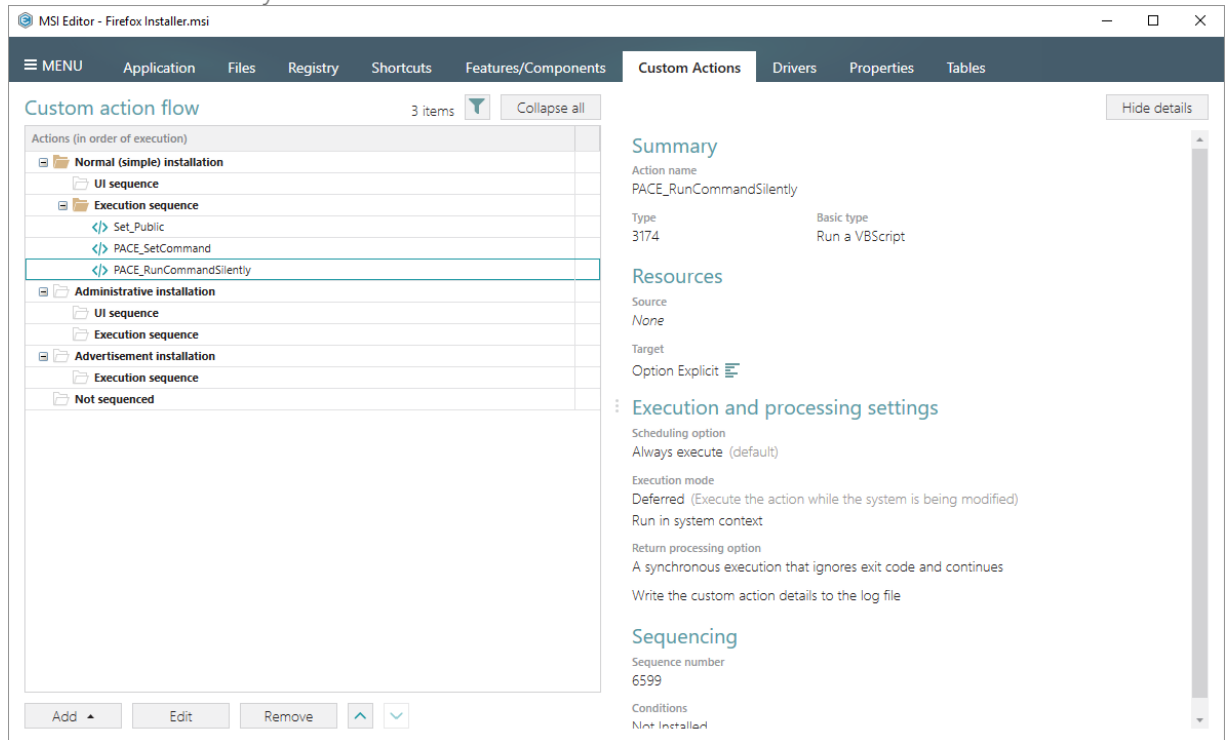
3.7.5.3 Edit Custom Action

Edit basic type, resources, sequence and other settings of the existing custom action.

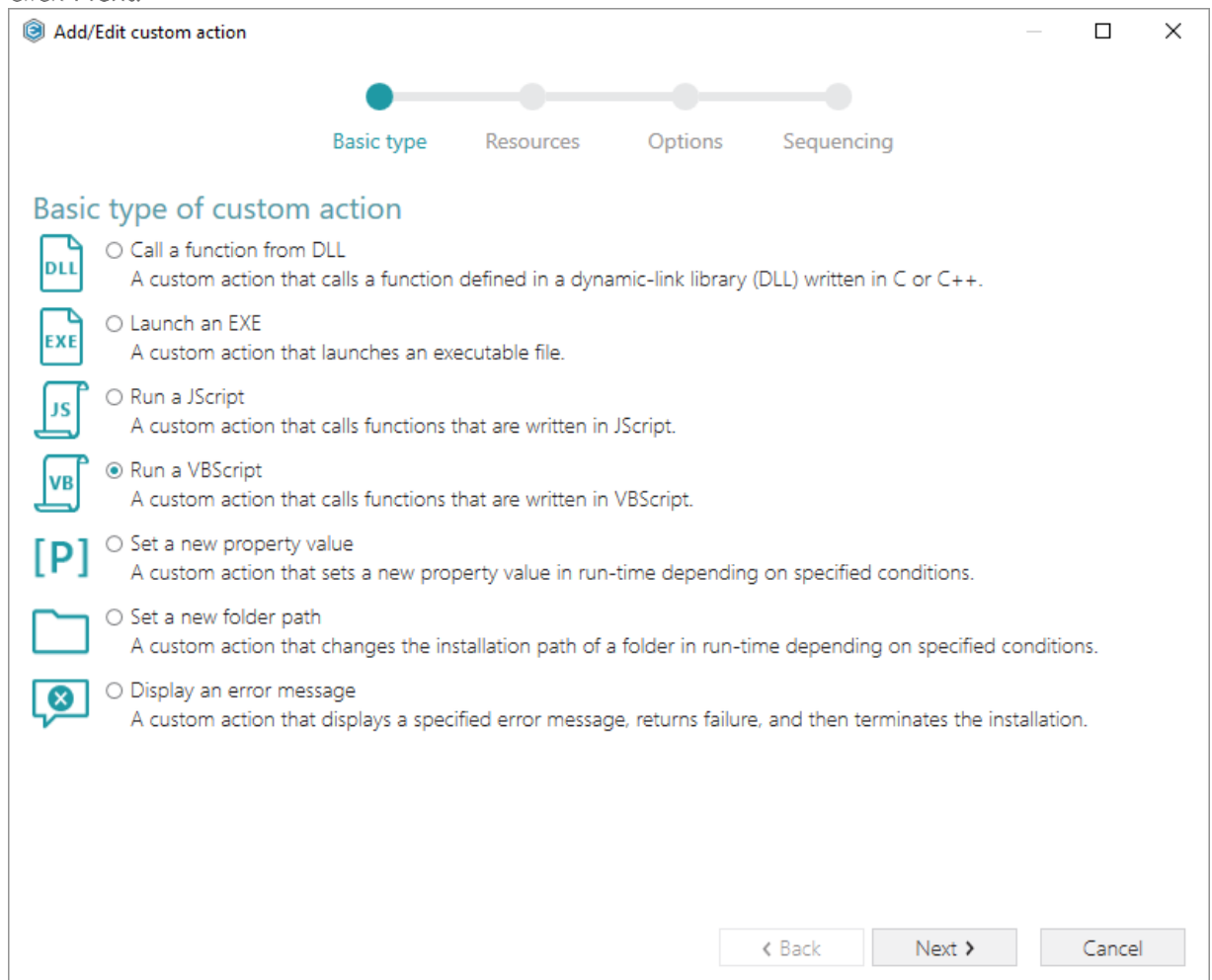
- [1]. Open the Custom Action tab.
Click Show details to review the action details.



- [2]. Select the necessary custom action from the list and click **Edit**.



- [3]. Either keep the existing basic type of your custom action or change it if necessary and click **Next**.



- [4]. If necessary, select new custom action resources such as a type of source and source itself, arguments, etc. Then, click **Next**.

NOTE The wizard displays only compatible fields and options for the previously selected custom action basic type.

The screenshot shows the 'Add/Edit custom action' wizard window. At the top, a progress bar indicates four steps: 'Basic type' (completed with a checkmark), 'Resources' (current step), 'Options', and 'Sequencing'. The main content area is titled 'Run a VBScript' and contains four radio button options:

- ☐ Stored in the temporary binary stream
Binary: [text box] [New binary]
- ☐ Installed by this package along with this application
File: [text box] [Browse...]
- ☐ Code of which is specified in the property
Property: [text box] [New property]
- ☒ Code of which is specified directly in the custom action
Script code: [text box containing:
Option Explicit
Dim sPath, WshShell
sPath = Session.Property("CustomActionData")
If Len(sPath) > 0 Then

Below the radio buttons is a section titled 'Optional function that can be called' with a 'Function name' text box. At the bottom right are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

- [5]. At the **Options** step, you can change the custom action name, execution mode (Immediate, Deferred, Rollback and Commit), execution context, scheduling, return processing and other options. Then, click **Next**.

NOTE All options that are incompatible with the previously selected settings are

disabled.

The screenshot shows the 'Add/Edit custom action' dialog box with the 'Options' tab selected. The progress bar at the top indicates that 'Basic type' and 'Resources' are completed, while 'Options' is the current step and 'Sequencing' is disabled. The 'Identification' section contains the 'Action name' field with the value 'PACE_RunCommandSilently'. The 'Execution and processing settings' section includes a dropdown for 'Execution mode' set to 'Deferred (Execute the action while the system is being modified)', three radio buttons for 'Run in logged-on user's context', 'Run in system context' (selected), and 'Run with user impersonation during per-machine installs on a terminal server', a dropdown for 'Scheduling option' set to 'Always execute (default)', and a dropdown for 'Return processing option' set to 'A synchronous execution that ignores exit code and continues'. At the bottom, there are checkboxes for 'Write the custom action details to the log file' (checked) and 'Run JScript or VBScript in 64-bit environment' (unchecked). Navigation buttons at the bottom right are '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

Add/Edit custom action

Basic type Resources **Options** Sequencing

Identification

Action name
PACE_RunCommandSilently

Execution and processing settings

Execution mode
Deferred (Execute the action while the system is being modified)

☐ Run in logged-on user's context
☒ Run in system context
☐ Run with user impersonation during per-machine installs on a terminal server

Scheduling option
Always execute (default)

Return processing option
A synchronous execution that ignores exit code and continues

☒ Write the custom action details to the log file
☐ Run JScript or VBScript in 64-bit environment

< Back Next > Cancel

- [6]. At the last step, you can change a position, where you would like to run your custom action. The sequence drop-down list allows you to select only compatible positions, taking into account your previously selected options. Also, you free to update the execution conditions either by entering them manually or choosing from the drop-down list. Click Finish to update your custom action.

NOTE Incompatible sequences are disabled.

Add/Edit custom action

Basic type

Resources

Options

Sequencing

Normal (simple) installation

UI sequence

Do not run in this sequence

Execution sequence (recommended)

Run after PublishProduct

UI sequence conditions

Execution sequence conditions

Not Installed

Administrative installation

UI sequence

Do not run in this sequence

Execution sequence

Do not run in this sequence

UI sequence conditions

Execution sequence conditions

NOTE The UI sequences, which typically contain standard actions related to collecting system information, are only processed if the user interface level is set to Reduced or Full; and, respectively are skipped if level is set to basic UI or no UI.

An administrative installation is typically initiated by a network administrator to assign and install applications for individual users and groups of users.

The advertisement installation sequence is not present on this step because it cannot be used for custom actions.

For information on the sequence conditions, see [Conditional Statement Syntax online](#).

Back

Finish

Cancel

- [7]. Click Show details to review details of the edited custom actions.
- NOTE All added and modified actions are highlighted with the green color.

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Collapse all

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Normal (simple) installation

UI sequence

Execution sequence

Set_Public

PACE_SetCommand

PACE_RunCommandSilently

Administrative installation

UI sequence

Execution sequence

Advertisement installation

Execution sequence

Not sequenced

Summary

Action name

PACE_RunCommandSilently

Type

3174

Basic type

Run a VBScript

Resources

Source

None

Target

Option Explicit

Execution and processing settings

Scheduling option

Always execute (default)

Execution mode

Deferred (Execute the action while the system is being modified)

Run in system context

Return processing option

A synchronous execution that ignores exit code and continues

Write the custom action details to the log file

Sequencing

Sequence number

6599

Conditions

Not Installed

3.7.6 Drivers

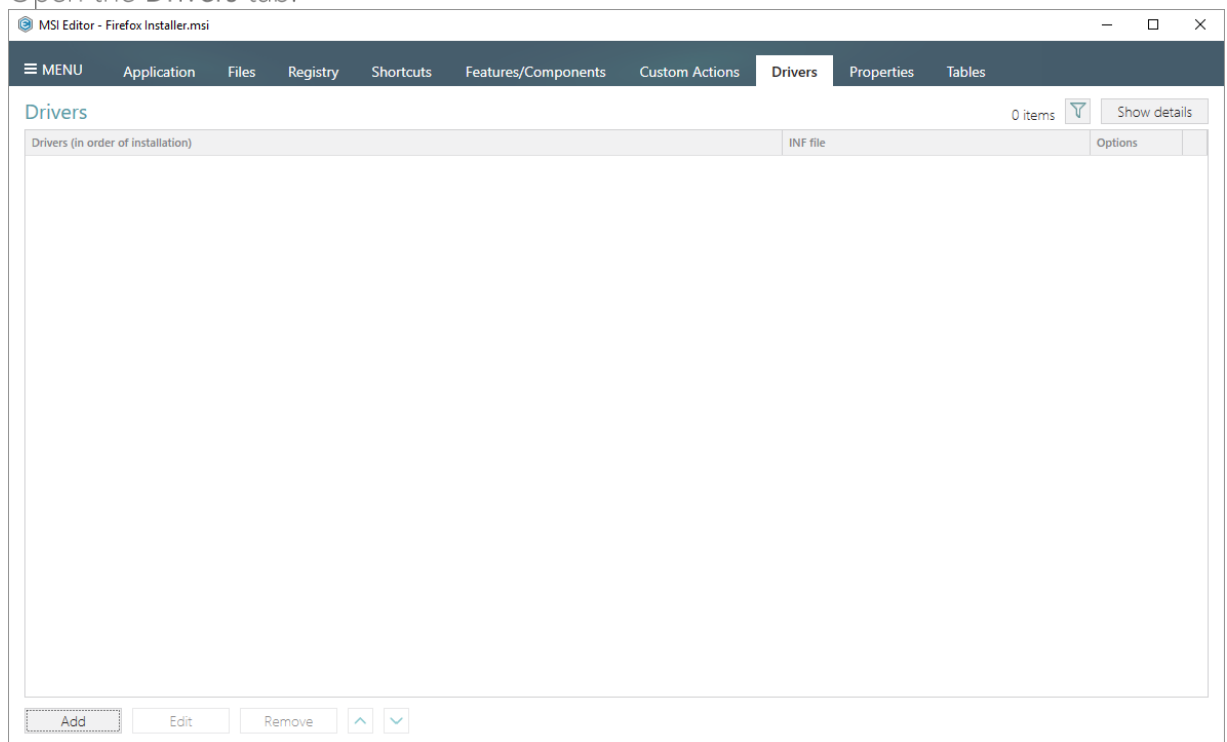
Choose a scenario that better suits your needs:

- **Add Driver**, described in section 3.7.6.1
Add a new device driver with the help of Driver Install Frameworks (DIFx) tools, a standard solution recommended by Microsoft.
- **Edit Driver**, described in section 3.7.6.2
Edit installation options, conditions and target architecture of the existing device driver.

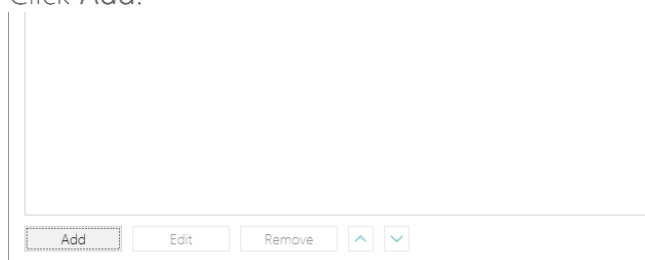
3.7.6.1 Add Driver

Add a new device driver with the help of Driver Install Frameworks (DIFx) tools, a standard solution recommended by Microsoft.

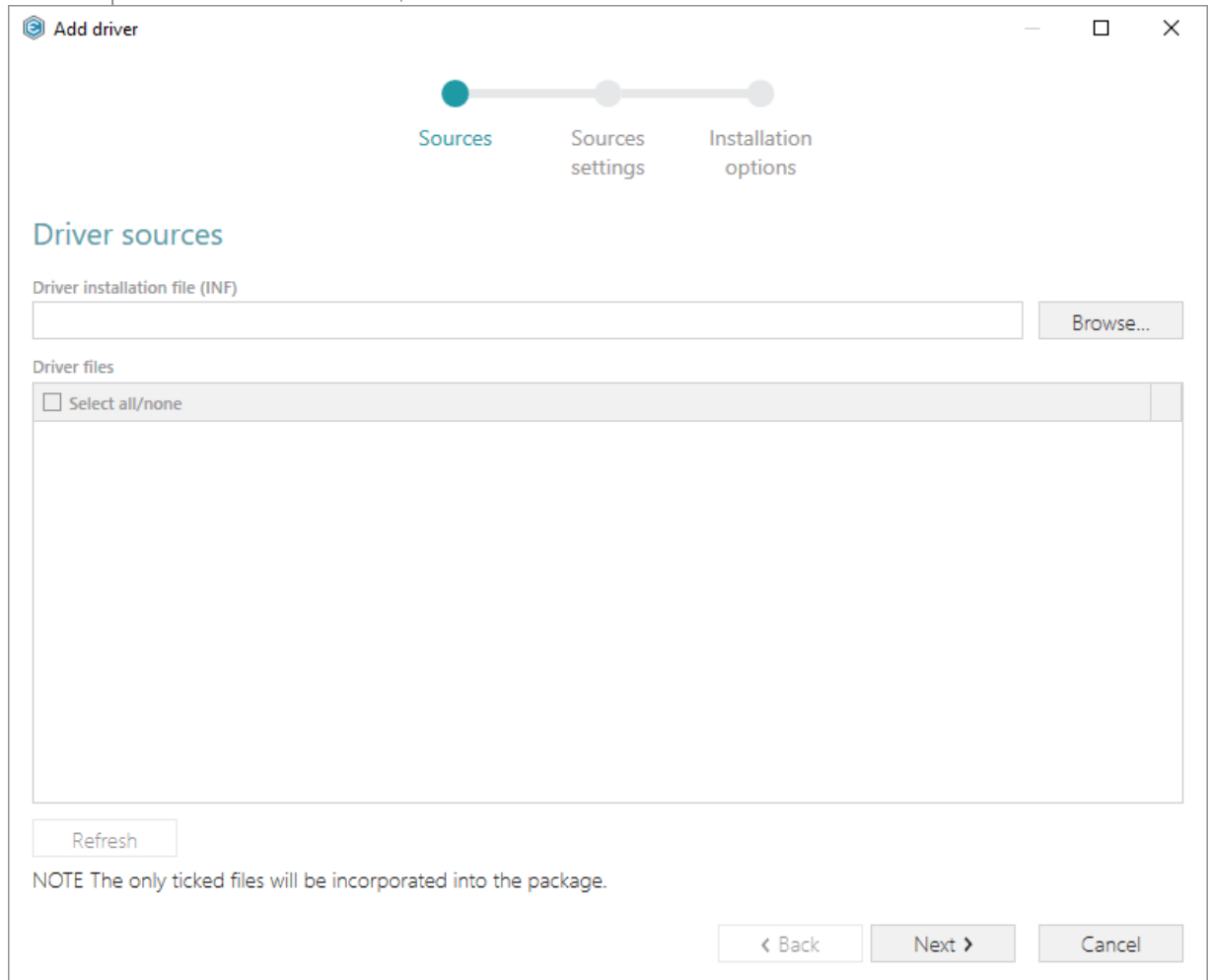
[1]. Open the Drivers tab.



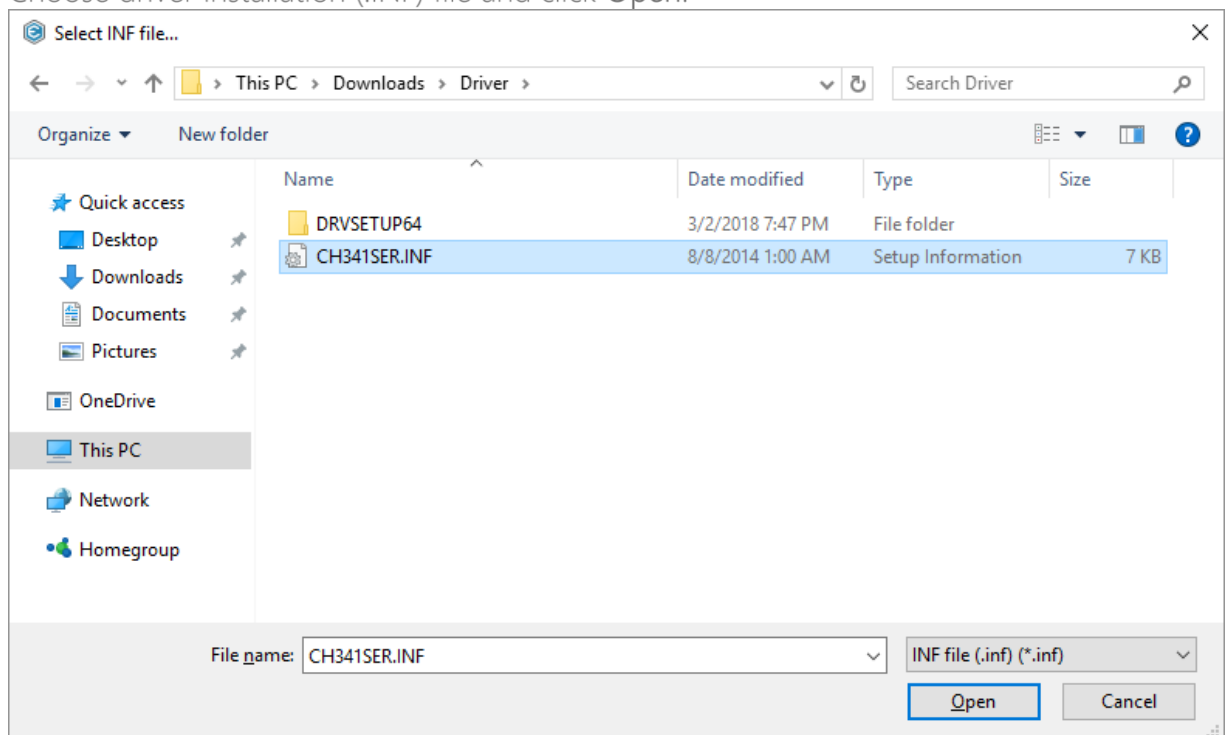
[2]. Click Add.



[3]. In the opened wizard window, click Browse.



[4]. Choose driver installation (.INF) file and click Open.



- [5]. Review the source driver files, list of which is acquired from the selected driver installation (.INF) file, and click **Next**.

NOTE Wizard additionally checks the existence of the source driver files on the file system, next to the selected INF file. If you have missing files, either untick their checkbox to skip such files (not recommended) or try to restore them.

Add driver

Sources Sources settings Installation options

Driver sources

Driver installation file (INF)

C:\Users\pace\Downloads\Driver\CH341SER.INF Browse...

Driver files

<input checked="" type="checkbox"/>	Select all/none
<input checked="" type="checkbox"/>	CH341S98.SYS
<input checked="" type="checkbox"/>	CH341PT.DLL
<input checked="" type="checkbox"/>	CH341SER.SYS
<input checked="" type="checkbox"/>	CH341S64.SYS
<input checked="" type="checkbox"/>	CH341SER.VXD

Refresh

NOTE The only ticked files will be incorporated into the package.

< Back Next > Cancel

- [6]. At this step, select a **destination folder**, where the previously selected driver files will be installed, choose one of the **compression types** for those files, specify a **target feature**, to which components of the driver files will be assigned. Then, click **Next**.

NOTE The wizard will additionally create a subfolder for driver files in the selected

destination folder.

The screenshot shows the 'Add driver' wizard window. At the top, a progress bar indicates three steps: 'Sources' (completed, marked with a checkmark), 'Sources settings' (current step), and 'Installation options'. The 'Sources settings' section includes a text box for 'Destination folder for driver files' containing 'ProgramFilesFolder\Mozilla Firefox (ID: INSTALLDIR)' and a 'Browse...' button. Below this is a 'Compression type' dropdown menu set to 'New CAB file'. The 'Target feature' dropdown is set to '<New Feature>' with a 'New feature' button. A checkbox labeled 'Create new feature automatically' is checked. The 'Prefix for components names' text box contains 'Driver_'. A note at the bottom states: 'NOTE Prefix in components names is used to make it easier for you to find all driver components, created according to the Microsoft packaging best practices.' At the bottom right are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

- [7]. At the last step, you can select driver installation options, used by Driver Install Frameworks (DIFx) tool, specify installation conditions, which will be used for the main driver component (see [Conditional Statement Syntax](#)), and select a target architecture, which defines whether a 32-bit or 64-bit DIFx tool will be used. Click Finish to add the driver.
- NOTE One package can not contain both 32-bit and 64-bit DIFx tool, and as a result, one package can not install driver on both platforms. Use separate packages if you need to

install driver on both 32-bit and 64-bit platforms.

Add driver

Sources

Sources settings

Installation options

Driver installation options

☐ Overwrite the existing driver
Force the installation of a new driver, even if the driver that is currently installed on a device is a better match than the new one.

☒ Prompt the user to connect the device to the computer
Display this prompt only if a device that matches the driver is not connected to the computer.

☒ Add a separate entry to Programs and Features in Control Panel

☐ Install unsigned driver and driver that have missing files
For more information about this type of installation, see [Installing Unsigned Driver Packages in Legacy Mode online](#).

☐ Remove driver files from the system driver store on uninstallation
This option should be used with caution and should be used only if the caller can verify that a binary file in the system is not required by any other driver package or application. Starting with Windows 7, this flag setting is ignored by the operating system.

Installation conditions

Target architecture

Install drivers only on 64-bit platforms

NOTE Driver Install Frameworks (DIFx) tools do not support installation of drivers on both 64-bit and 32-bit platforms using a single package. Use separate packages for each of the platforms.

Back

Finish

Cancel

[8]. The newly added device driver will be automatically selected. Click Show details to review the driver details.

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1 item

Drivers (in order of installation)

Driver_CH341SER.INF

Add

Edit

Remove

Up

Down

Summary

Driver

Driver_CH341SER.INF

Options

6

Sources

Driver installation file (INF)

ProgramFilesFolder\Mozilla Firefox\CH341SER\CH341SER.INF (ID: CH341SER.INF)

Driver files

ProgramFilesFolder\Mozilla Firefox\CH341SER\CH341SER.VXD (ID: CH341SER.VXD)

ProgramFilesFolder\Mozilla Firefox\CH341SER\CH341SER.SYS (ID: CH341SER.SYS)

ProgramFilesFolder\Mozilla Firefox\CH341SER\CH341PT.DLL (ID: CH341PT.DLL)

ProgramFilesFolder\Mozilla Firefox\CH341SER\CH341S98.SYS (ID: CH341S98.SYS)

ProgramFilesFolder\Mozilla Firefox\CH341SER\CH341S64.SYS (ID: CH341S64.SYS)

Installation options

☐ Overwrite the existing driver

☒ Prompt the user to connect the device to the computer

☒ Add a separate entry to Programs and Features in Control Panel

☐ Install unsigned driver and driver that have missing files

☐ Remove driver files from the system driver store on uninstallation

Conditions

None

Sequencing

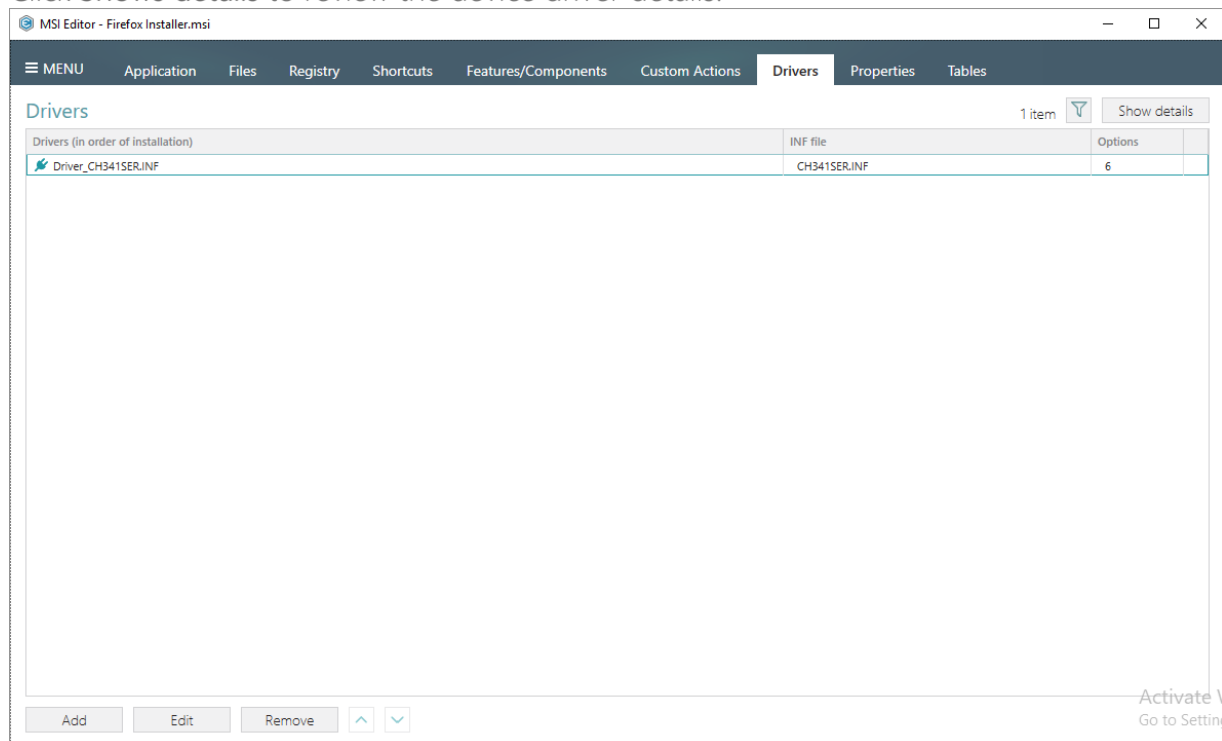
Sequence number

3.7.6.2 Edit Driver

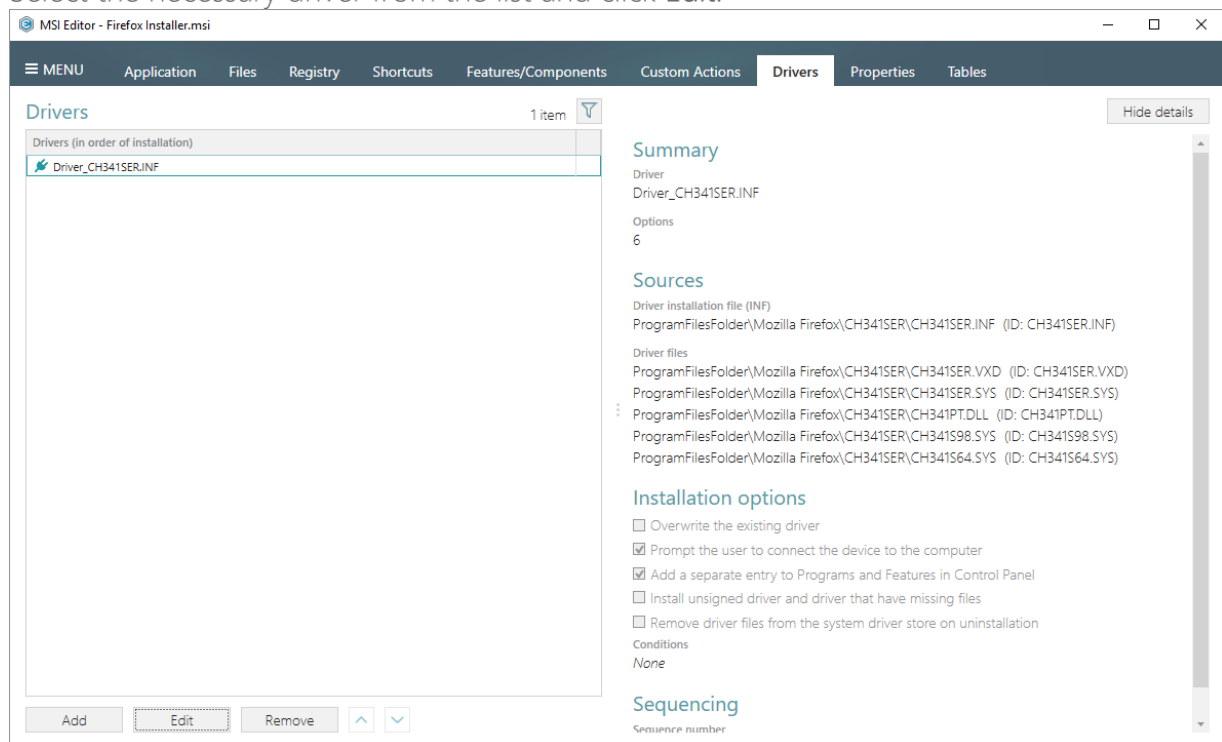
Edit installation options, conditions and target architecture of the existing device driver.

- [1]. Open the Drivers tab.

Click **Shows details** to review the device driver details.



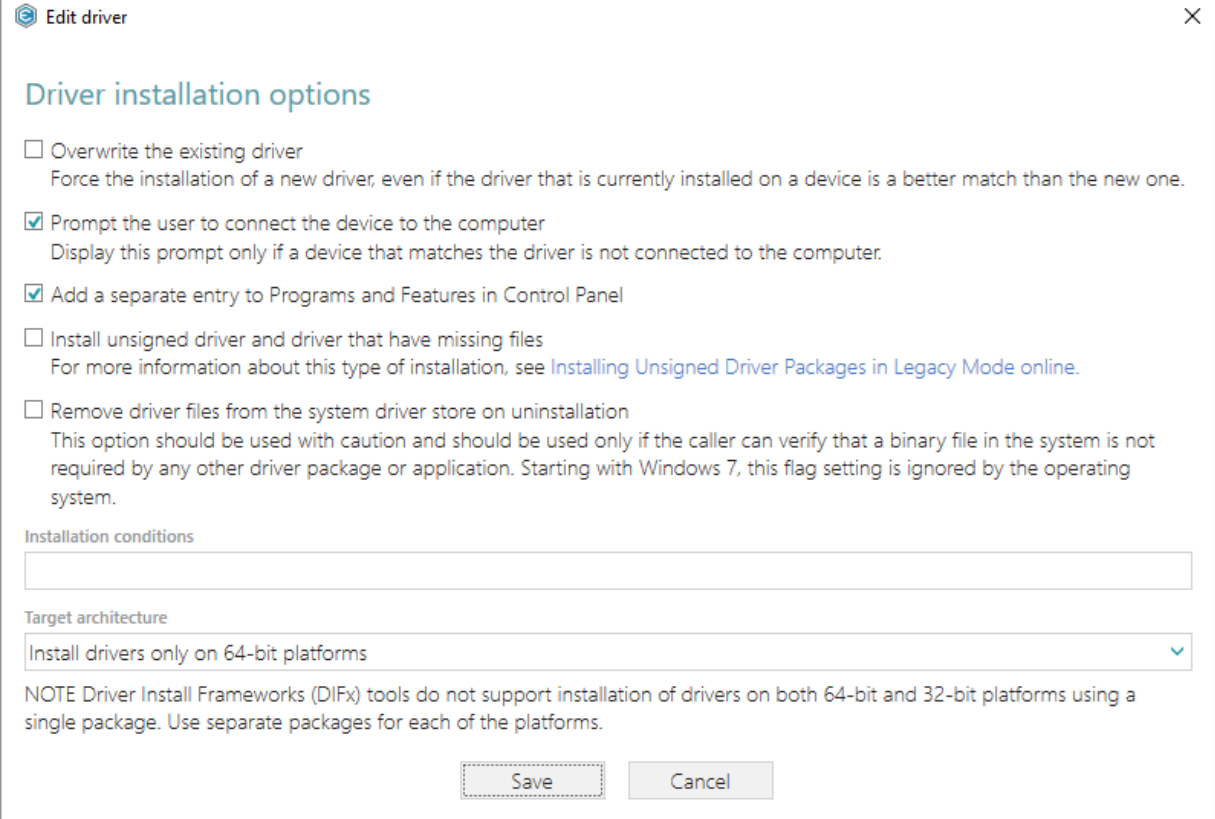
- [2]. Select the necessary driver from the list and click **Edit**.



- [3]. In the opened window you can change driver installation options, used by Driver Install Frameworks (DIFx) tool, specify installation conditions, which will be used for the main driver component (see [Conditional Statement Syntax](#)), and change a target architecture,

which defines whether a 32-bit or 64-bit DIFx tool will be used. Click **Save** to update the driver settings.

NOTE One package can not contain both 32-bit and 64-bit DIFx tool, and as a result, one package can not install driver on both platforms. Use separate packages if you need to install driver on both 32-bit and 64-bit platforms..



The screenshot shows a Windows-style dialog box titled "Edit driver" with a close button (X) in the top right corner. The dialog contains the following elements:

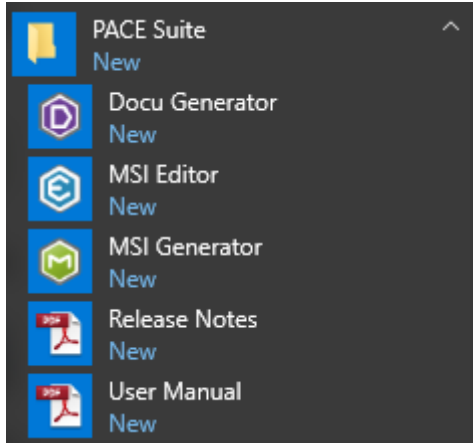
- Driver installation options** section with a list of checkboxes:
 - ☐ Overwrite the existing driver
Force the installation of a new driver, even if the driver that is currently installed on a device is a better match than the new one.
 - ☒ Prompt the user to connect the device to the computer
Display this prompt only if a device that matches the driver is not connected to the computer.
 - ☒ Add a separate entry to Programs and Features in Control Panel
 - ☐ Install unsigned driver and driver that have missing files
For more information about this type of installation, see [Installing Unsigned Driver Packages in Legacy Mode online](#).
 - ☐ Remove driver files from the system driver store on uninstallation
This option should be used with caution and should be used only if the caller can verify that a binary file in the system is not required by any other driver package or application. Starting with Windows 7, this flag setting is ignored by the operating system.
- Installation conditions** section with an empty text input field.
- Target architecture** section with a dropdown menu showing "Install drivers only on 64-bit platforms" and a downward arrow.
- A **NOTE** at the bottom: "Driver Install Frameworks (DIFx) tools do not support installation of drivers on both 64-bit and 32-bit platforms using a single package. Use separate packages for each of the platforms."
- At the bottom right, there are two buttons: "Save" (with a dashed border) and "Cancel".

3.8 Edit Project

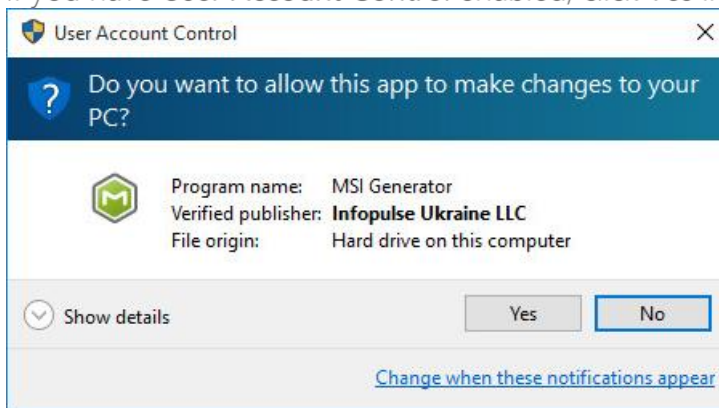
3.8.1 Pre-Condition

Open a project file following the instructions below:

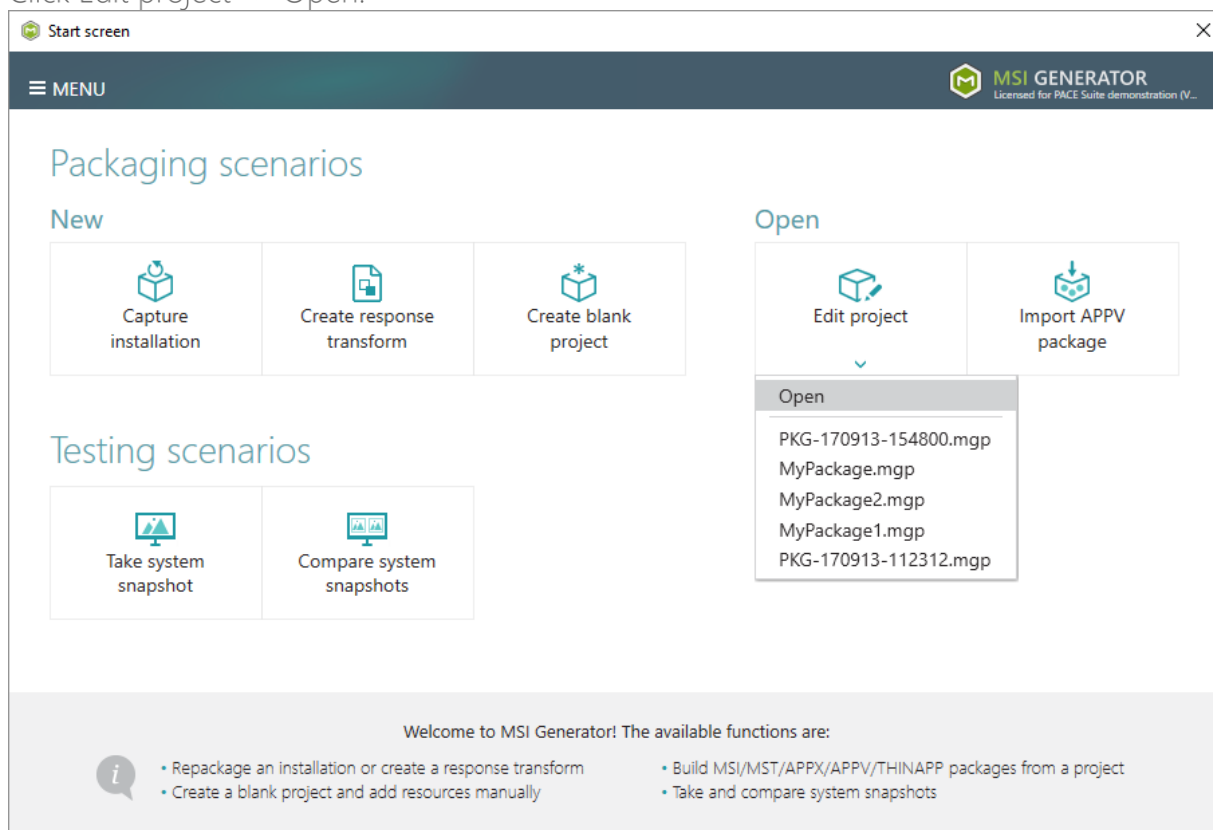
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



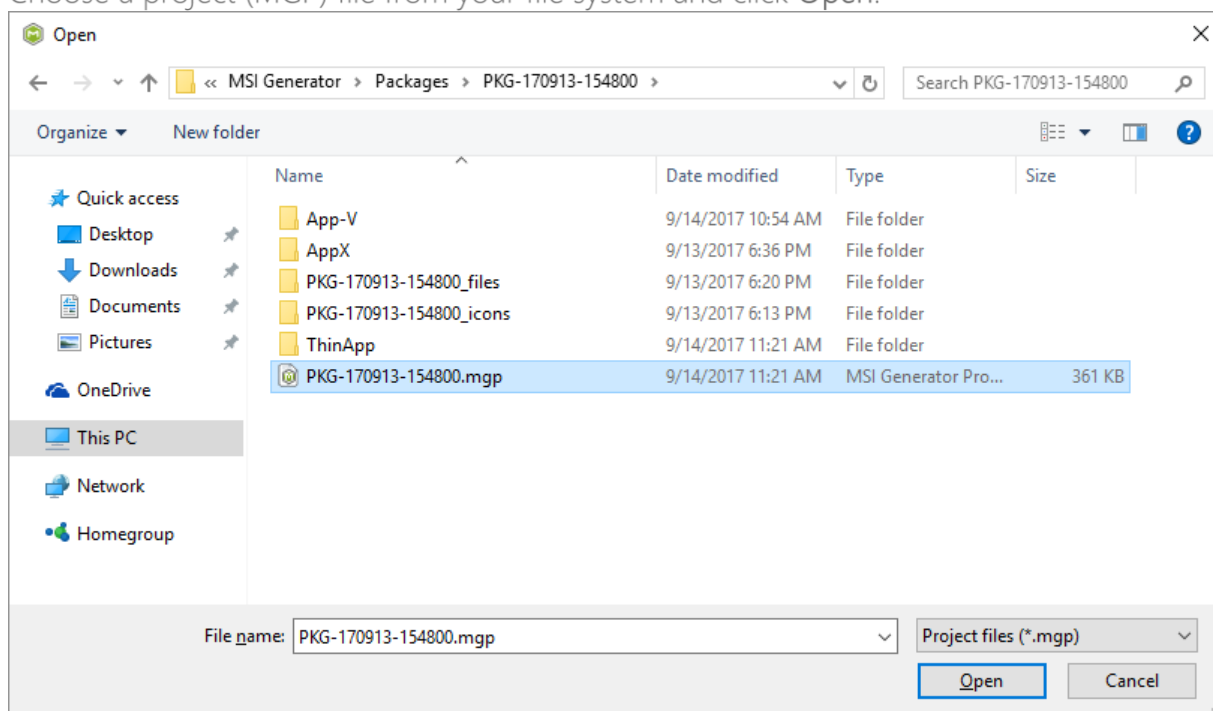
- [2]. If you have User Account Control enabled, click Yes in the opened window.



[3]. Click Edit project -> Open.



[4]. Choose a project (MGP) file from your file system and click Open.



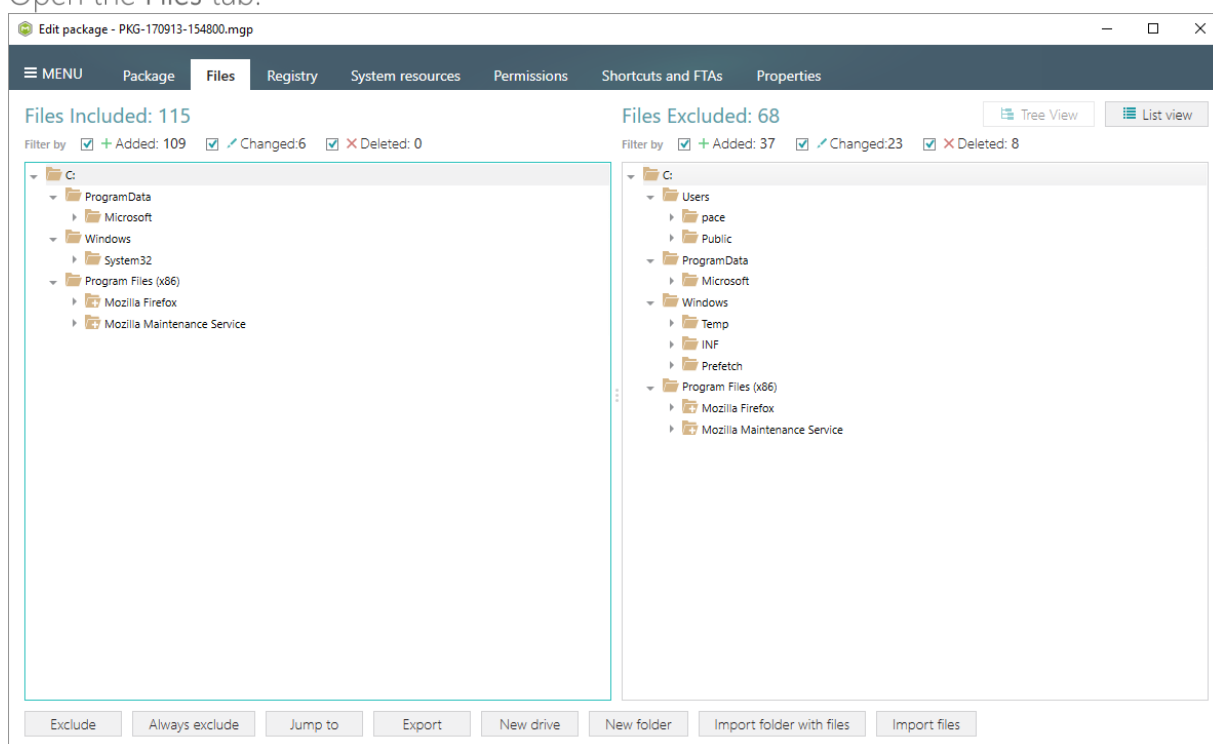
3.8.2 File and Folders

MSI Generator filters captured files and folders automatically and puts excluded (filtered) ones to the right pane, named '**Files Excluded**', and the rest of resources – to the left pane, named '**Files Included**'. Resources from the '**Files Included**' pane will be saved to your package, and resources from the '**Files Excluded**' will not be a part of the package, it will be kept as excluded ones only in the project. Note that you can include or exclude necessary resources at any time.

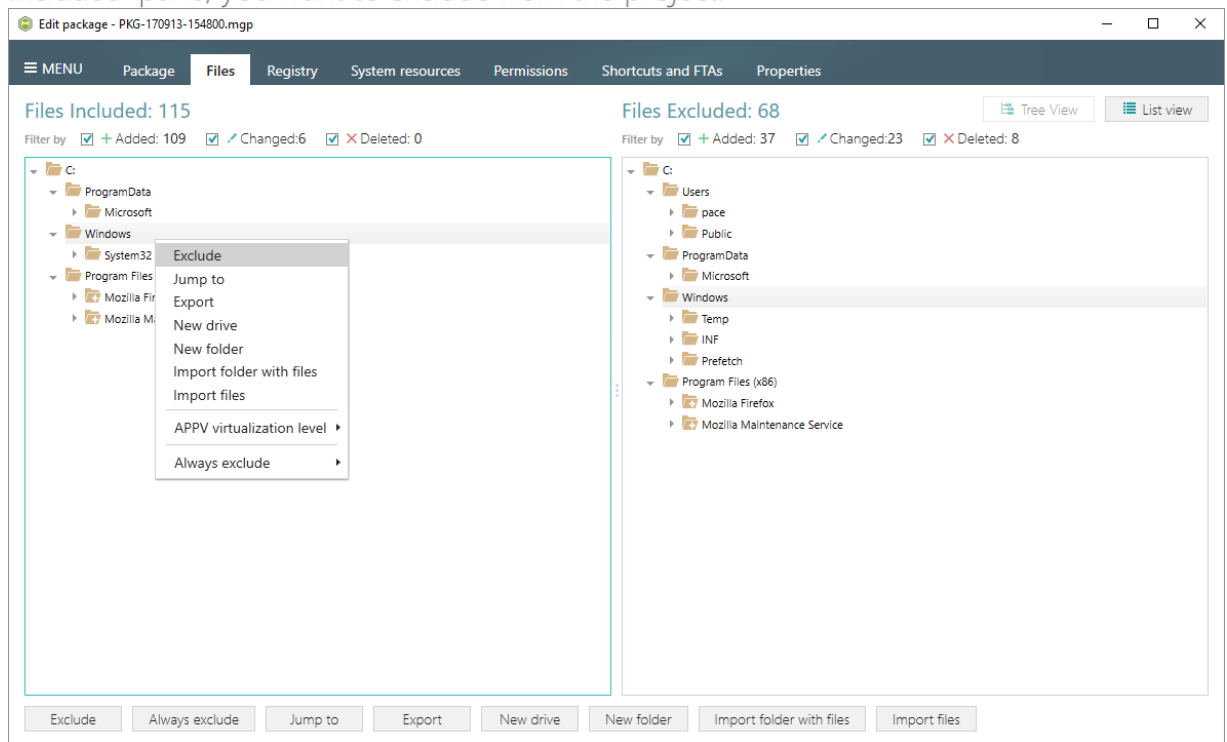
3.8.2.1 Exclude Files and Folders

Exclude unnecessary resources from the project.

[1]. Open the Files tab.



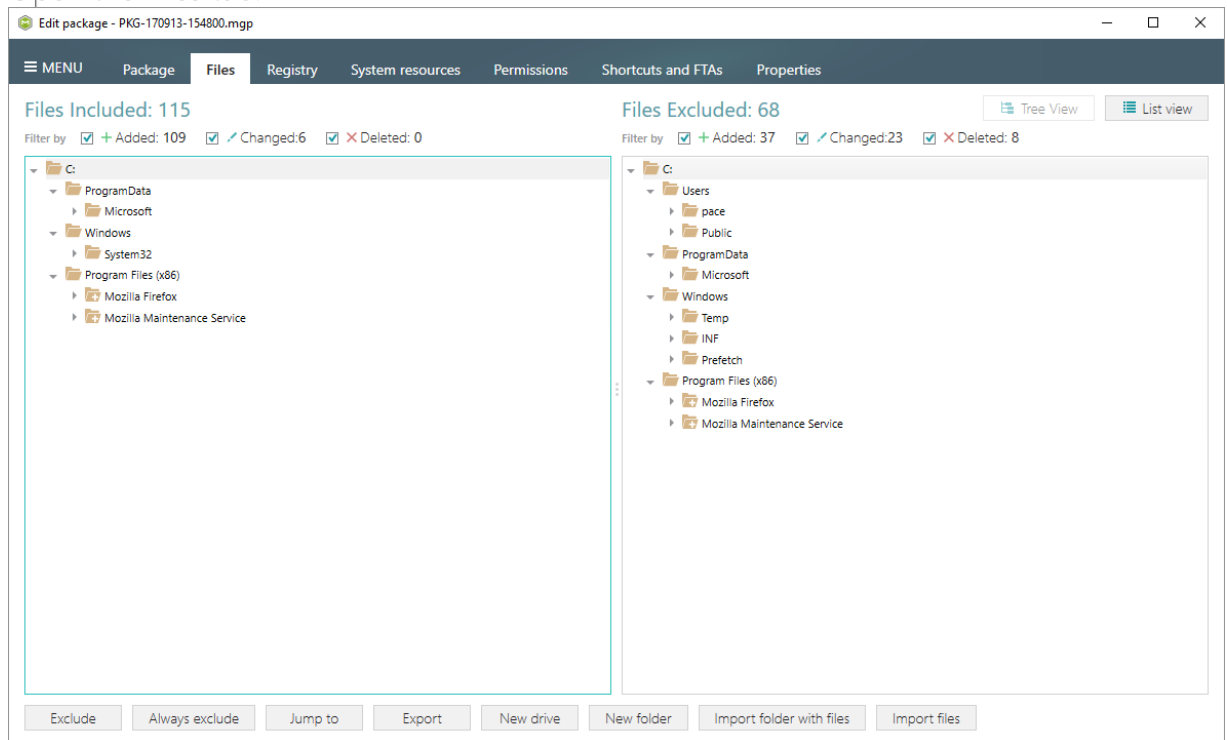
- [2]. Select Exclude from the context menu of an item, which is located in the left 'Files Included' pane, you want to exclude from the project.



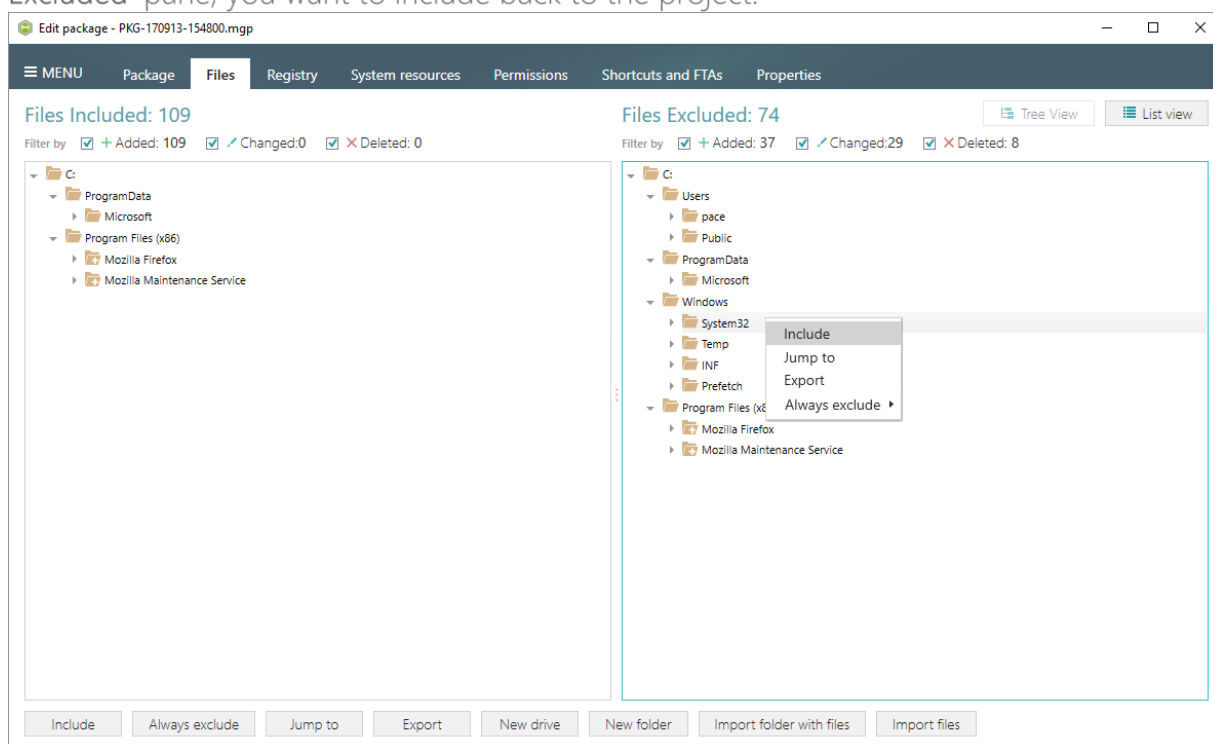
3.8.2.2 Include Files and Folders

Include necessary resources, previously excluded from the project.

- [1]. Open the Files tab.

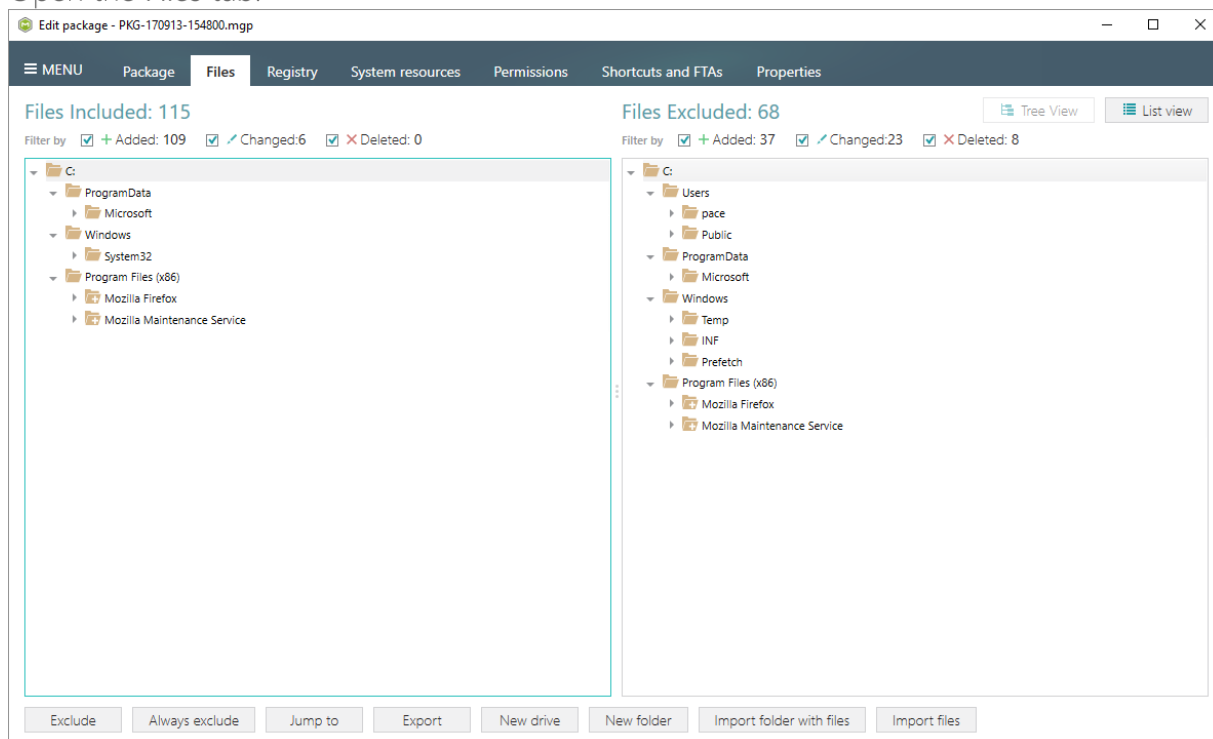


- [2]. Select Include from the context menu of an item, which is located in the right 'Files Excluded' pane, you want to include back to the project.

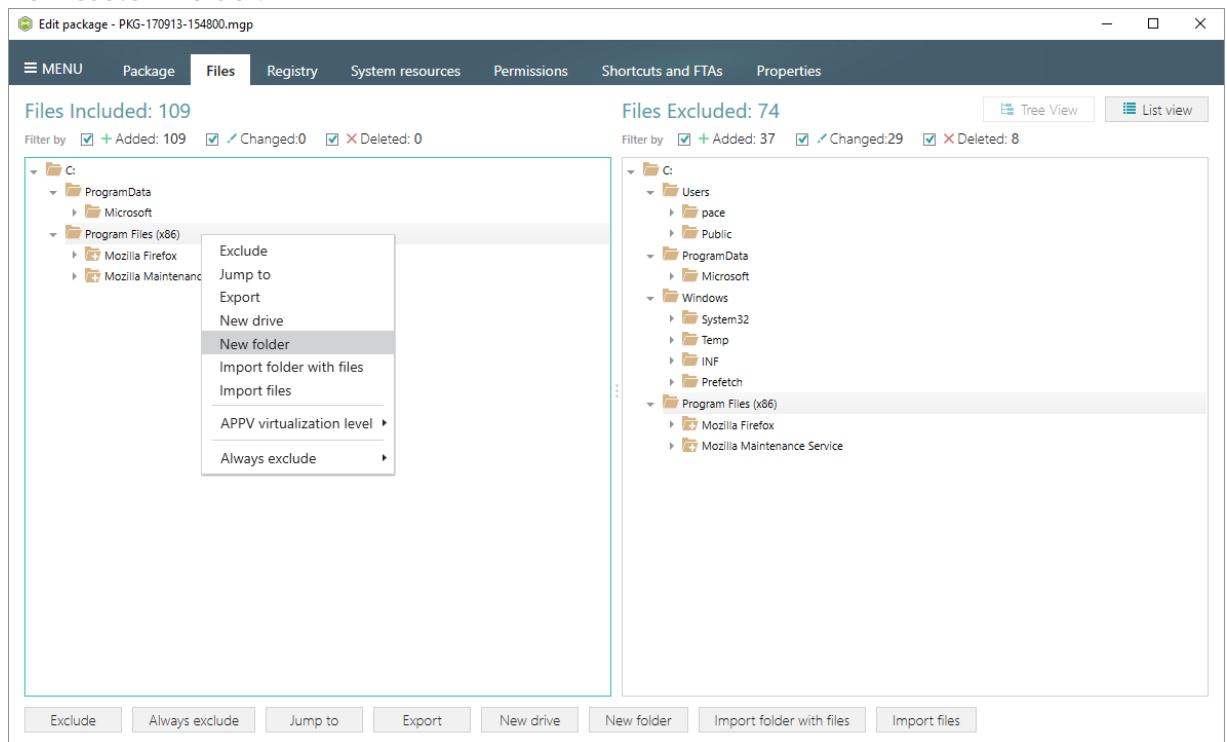


3.8.2.3 Add Custom Folder

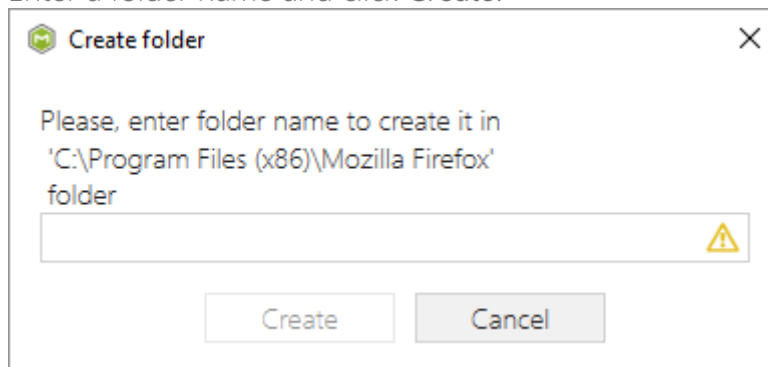
- [1]. Open the Files tab.



- [2]. Select **New folder** from the context menu of a parent folder, to which you want to add a new custom folder.

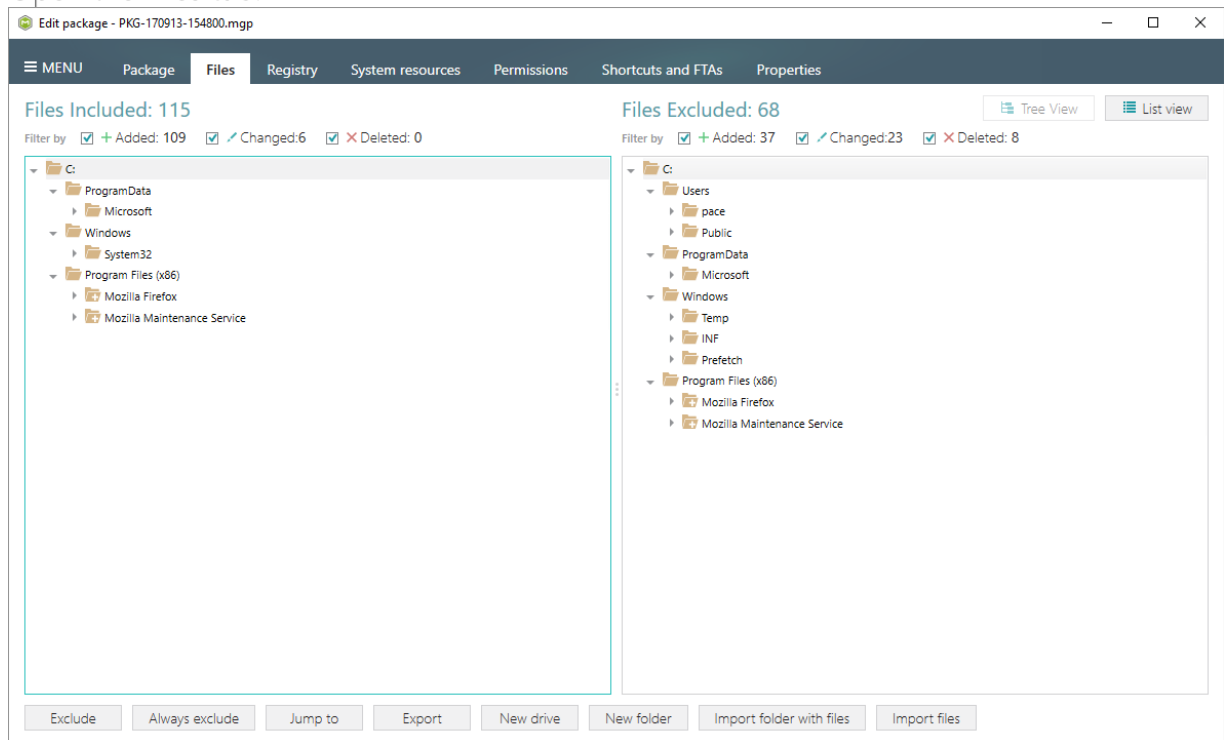


- [3]. Enter a folder name and click **Create**.

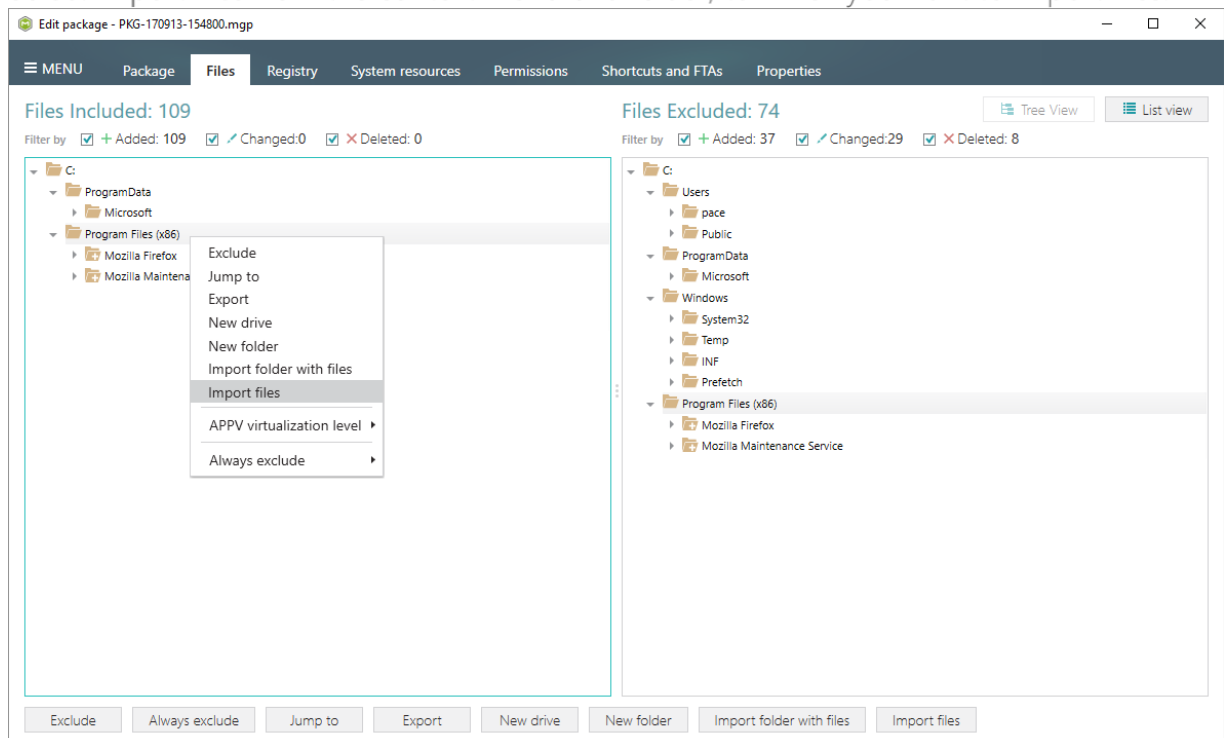


3.8.2.4 Import Files

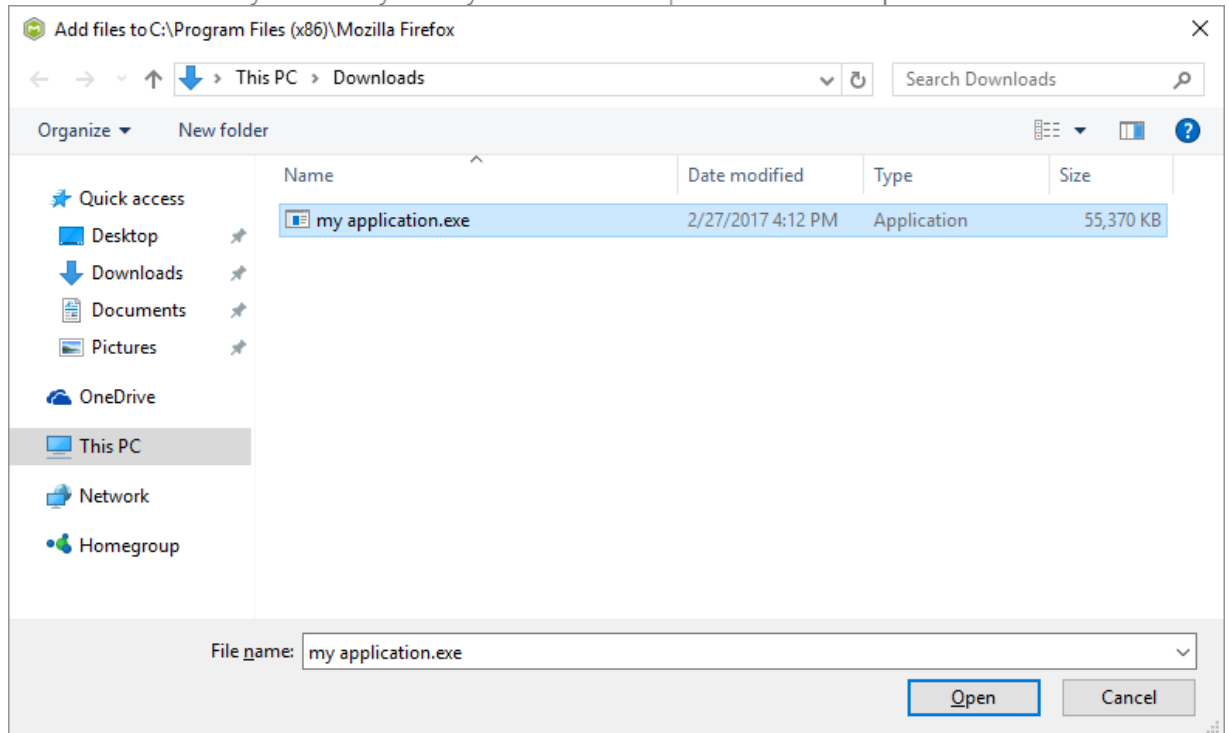
[1]. Open the Files tab.



[2]. Select Import files from the context menu of a folder, to which you want to import files.



[3]. Choose files from your file system you want to import and click Open.



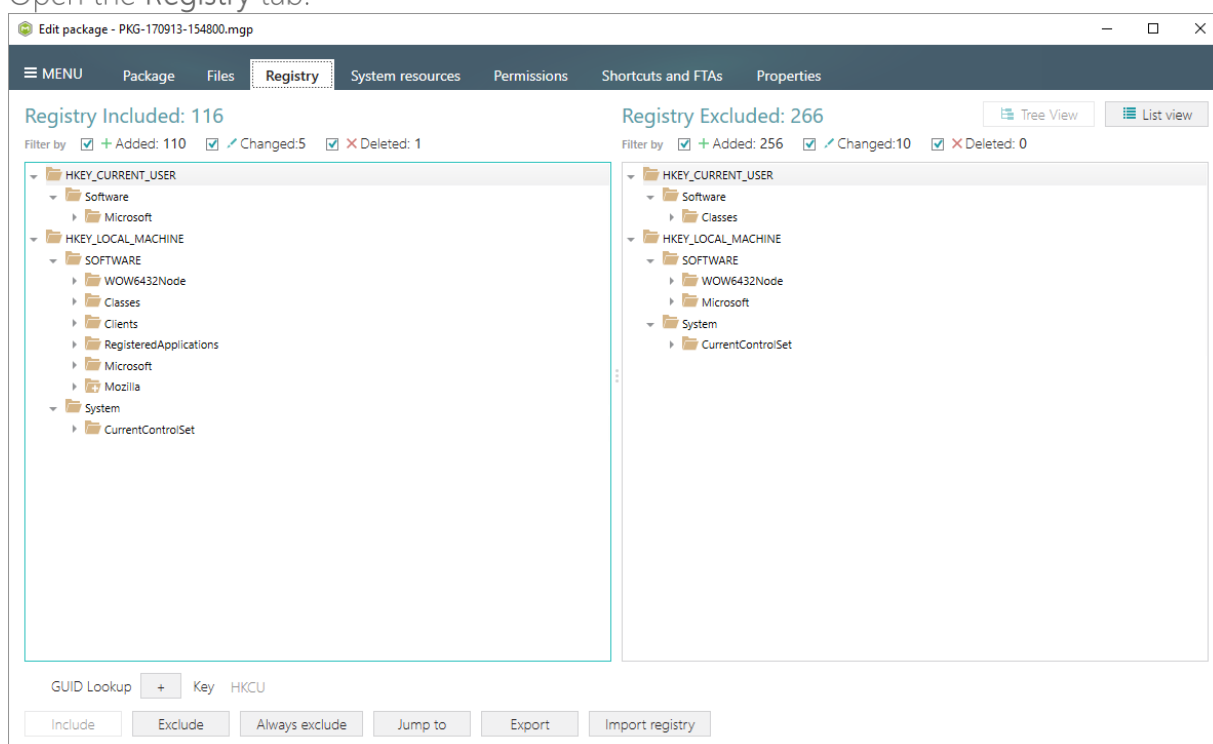
3.8.3 Registry

MSI Generator filters captured registry entries automatically and puts excluded (filtered) ones to the right pane, named 'Registry Excluded', and the rest of resources – to the left pane, named 'Registry Included'. Resources from the 'Registry Included' pane will be saved to your package, and resources from the 'Registry Excluded' will not be a part of the package, it will be kept as excluded ones only in the project. Note that you can include or exclude necessary resources at any time.

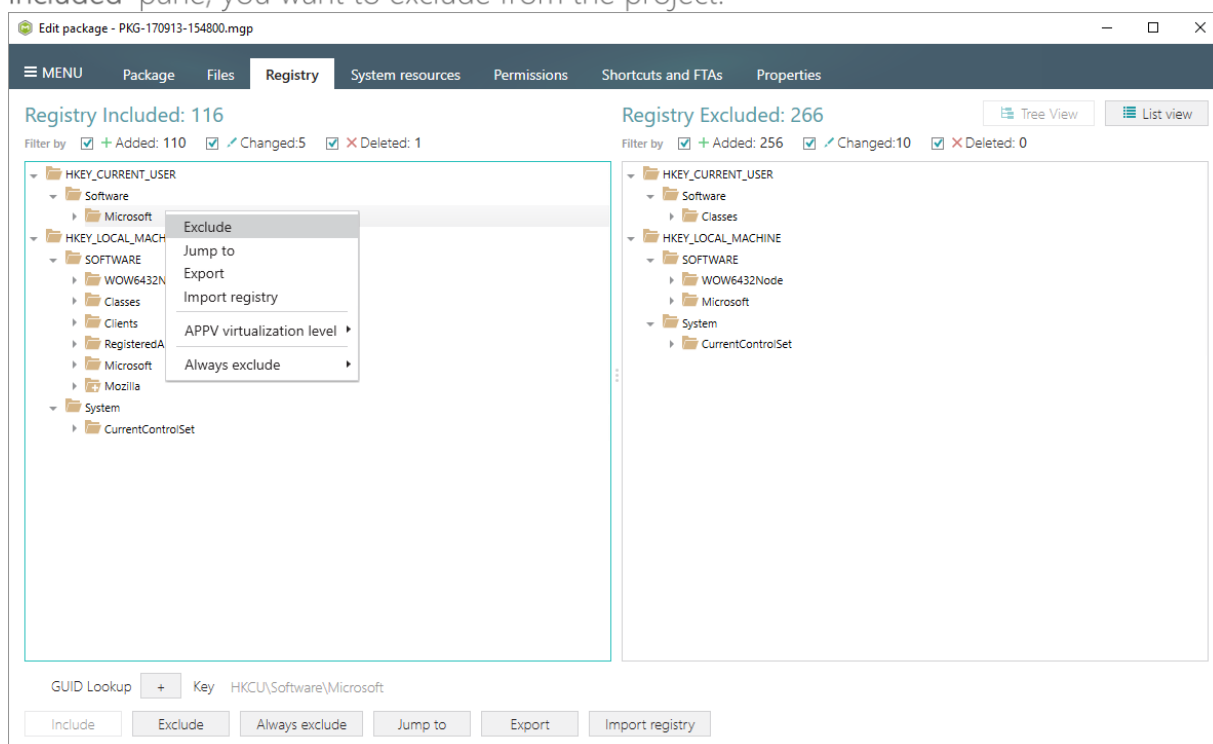
3.8.3.1 Exclude Registry Entries

Exclude unnecessary resources from the project.

[1]. Open the Registry tab.



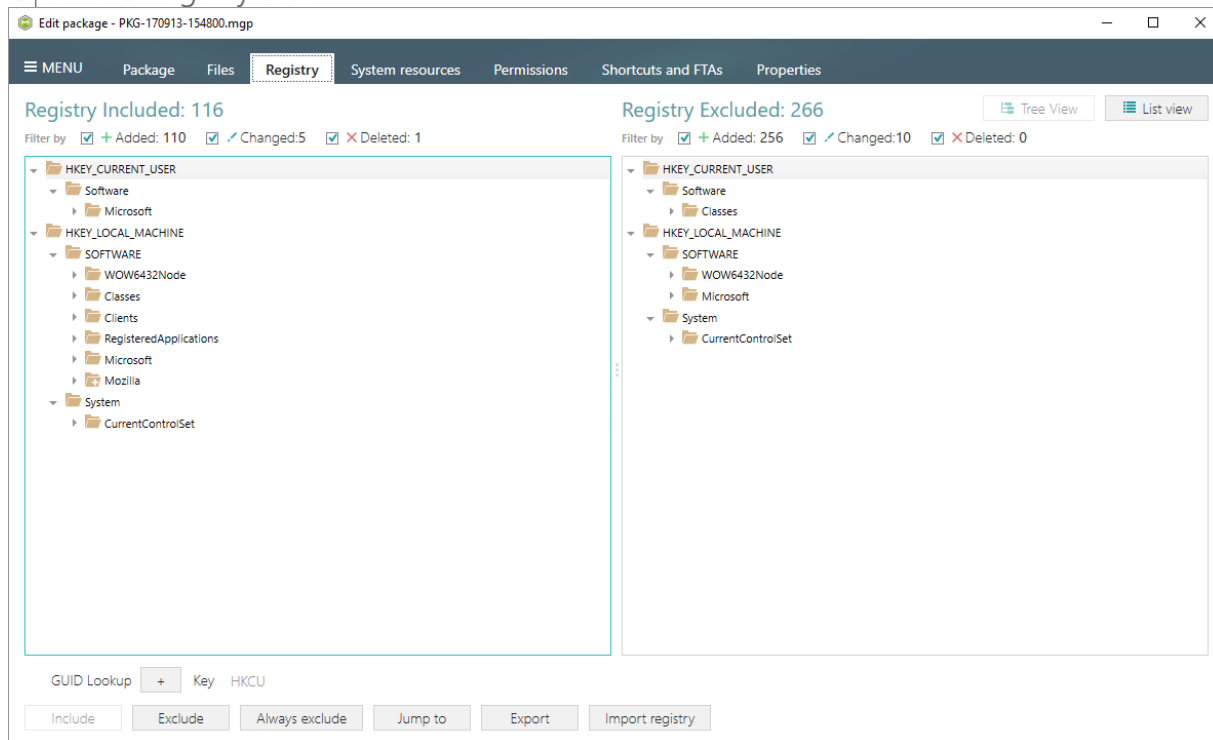
- [2]. Select Exclude from the context menu of an item, which is located in the left 'Registry Included' pane, you want to exclude from the project.



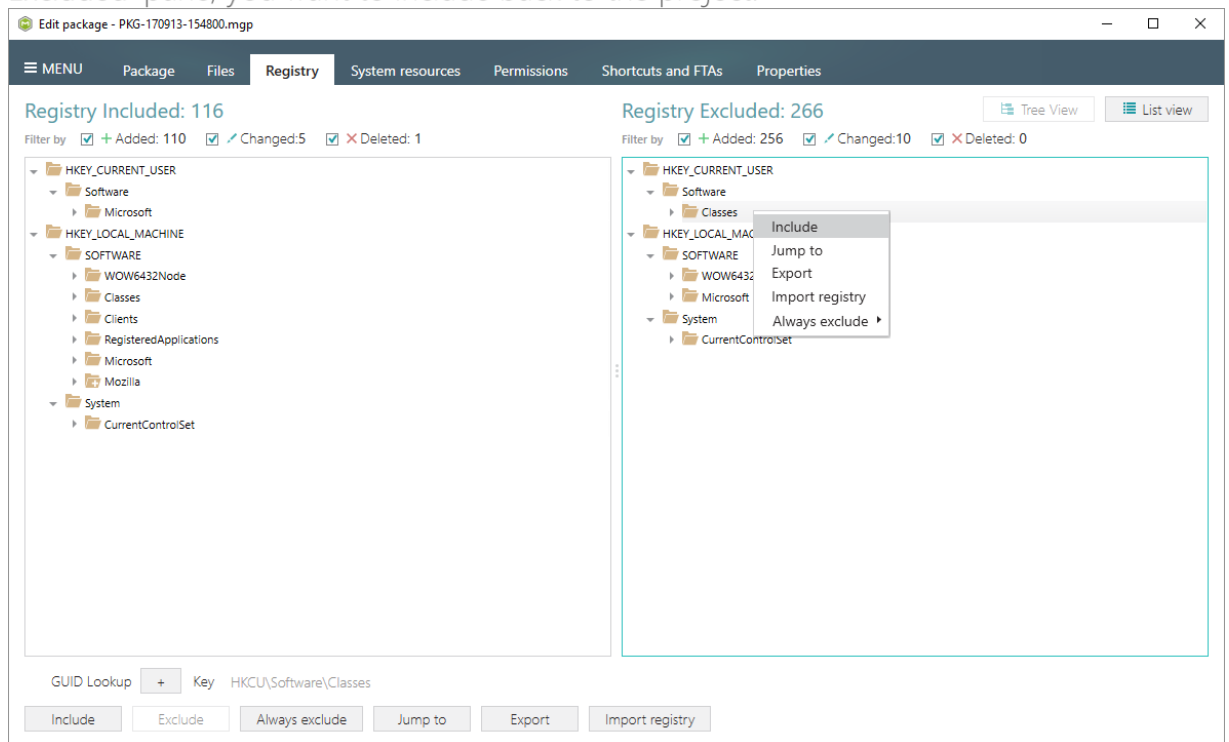
3.8.3.2 Include Registry Entries

Include necessary resources, previously excluded from the project.

- [1]. Open the Registry tab.

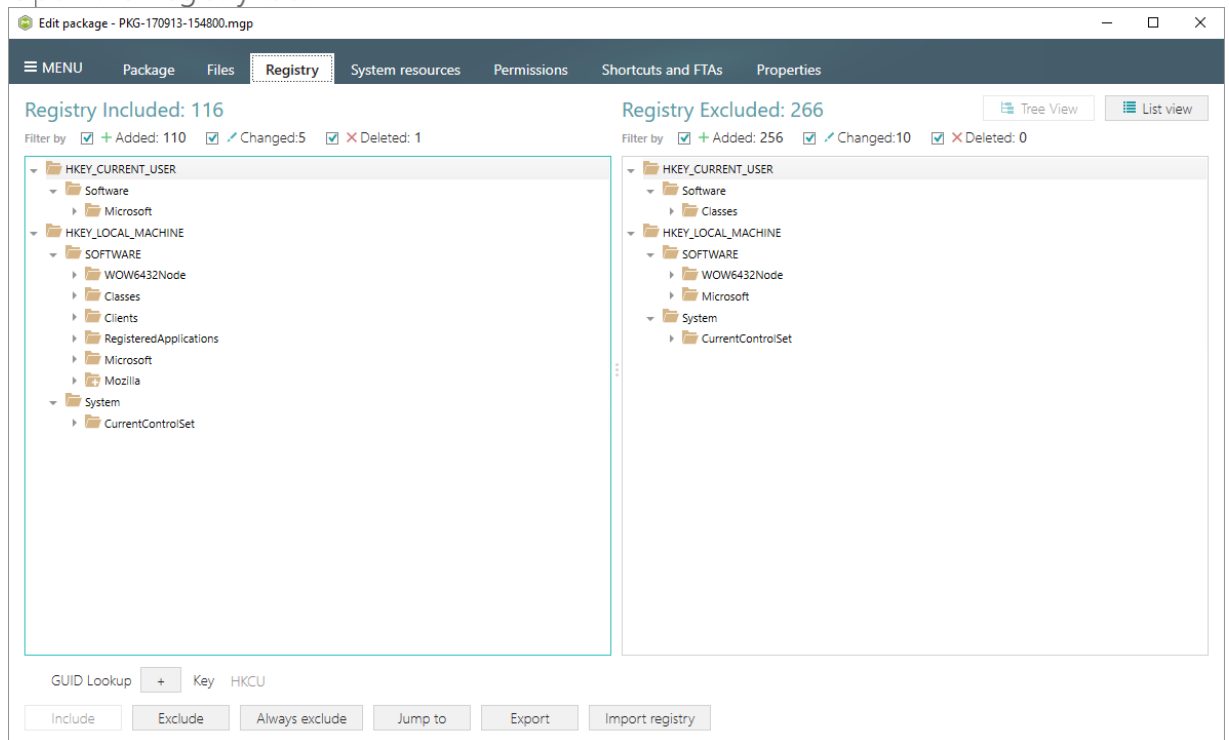


- [2]. Select **Include** from the context menu of an item, which is located in the right 'Registry Excluded' pane, you want to include back to the project.

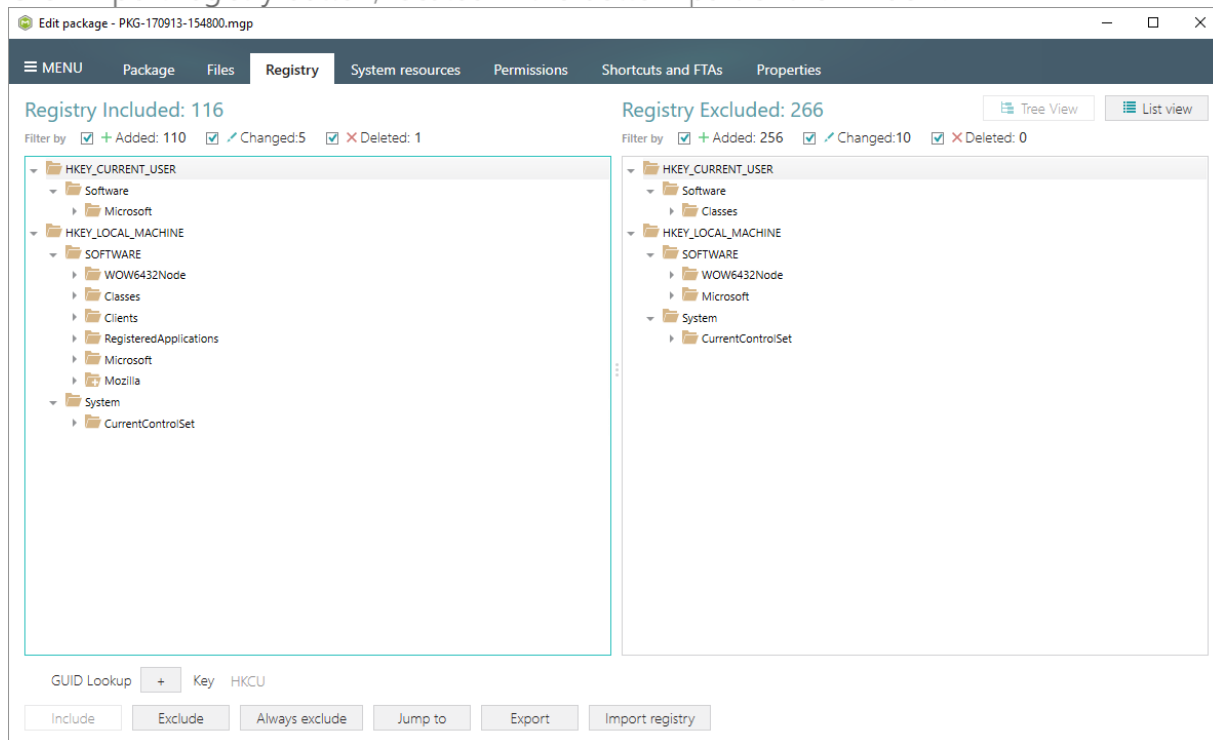


3.8.3.3 Import Registry

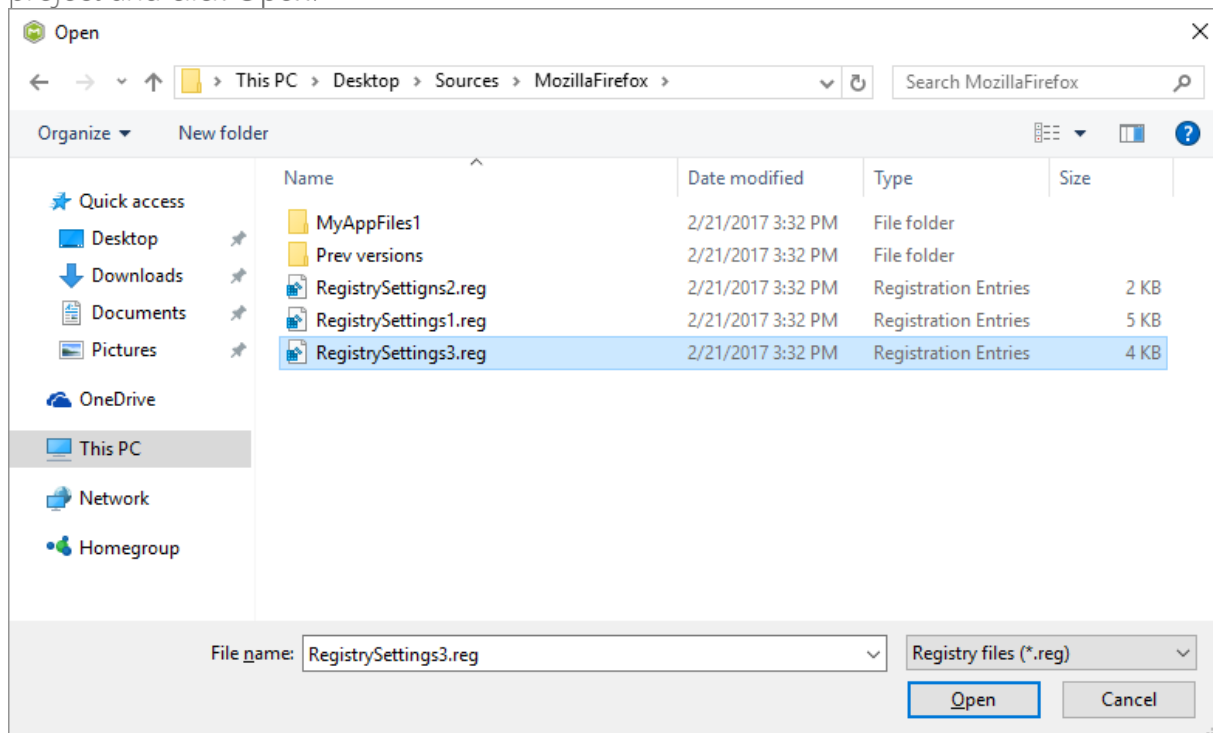
- [1]. Open the Registry tab.



- [2]. Click **Import registry** button, located in the bottom part of the window.

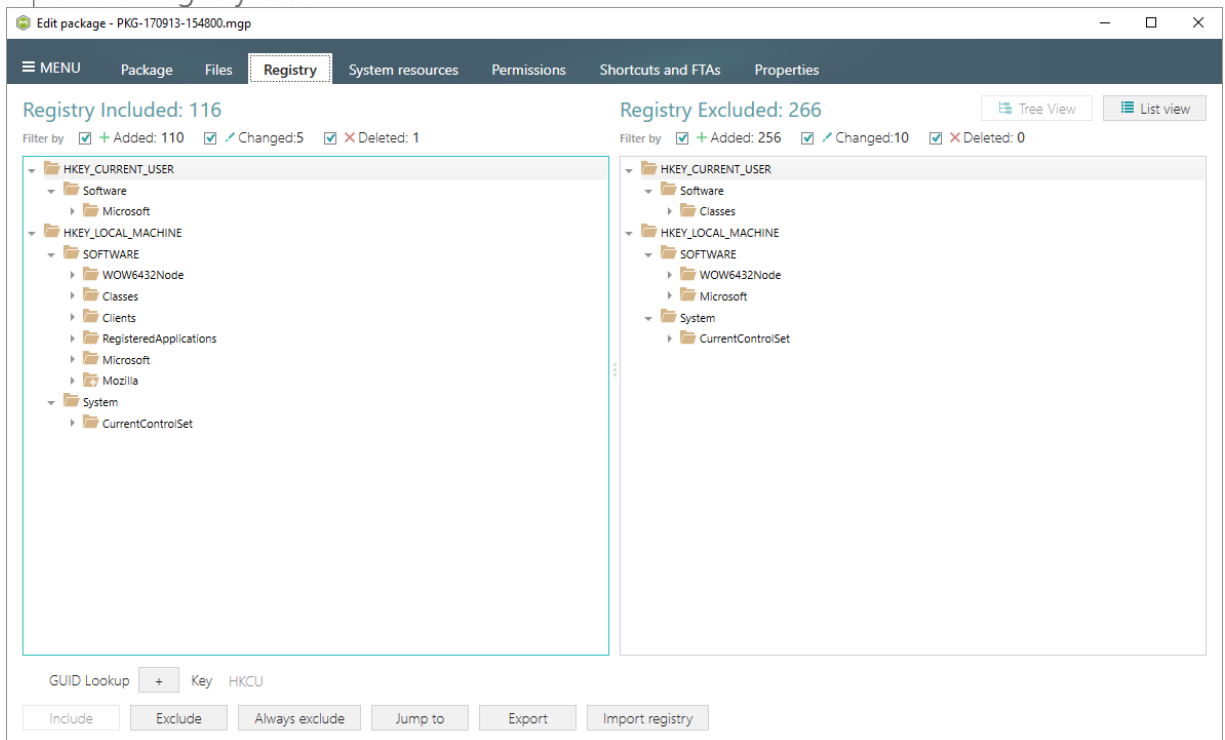


- [3]. Choose a REG file from your file system, content of which you want to import to the project and click **Open**.

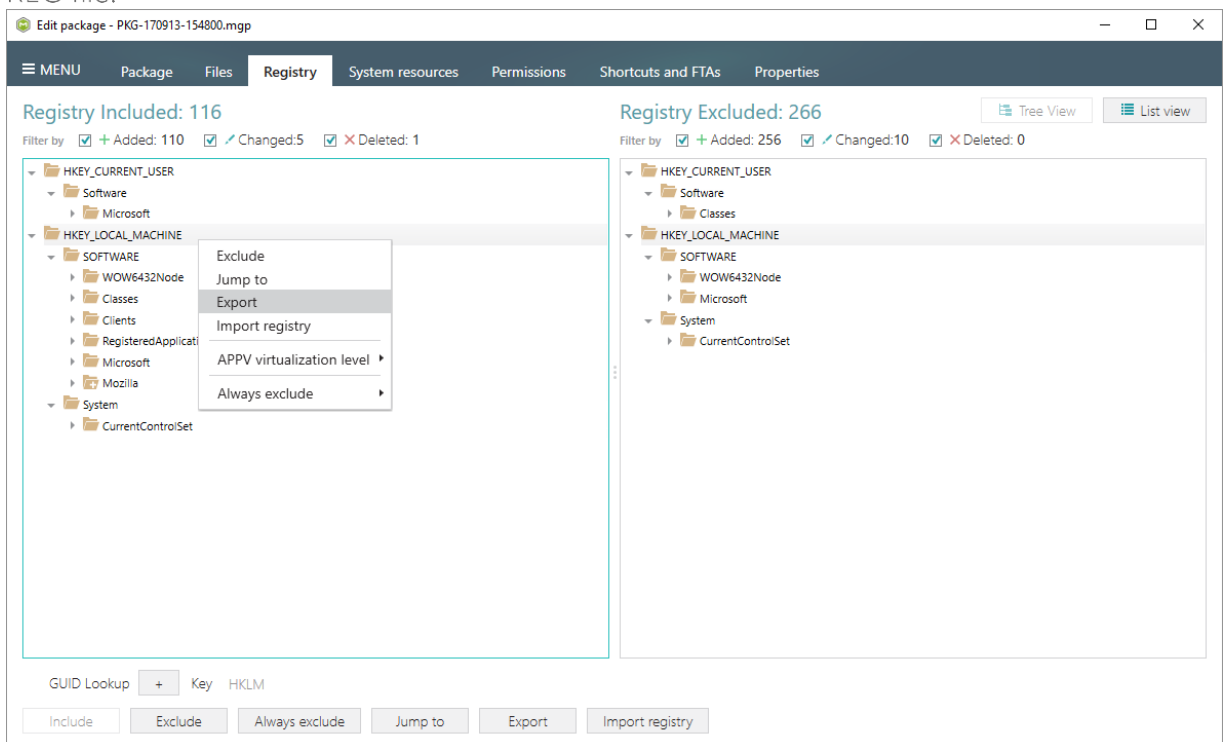


3.8.3.4 Export Registry

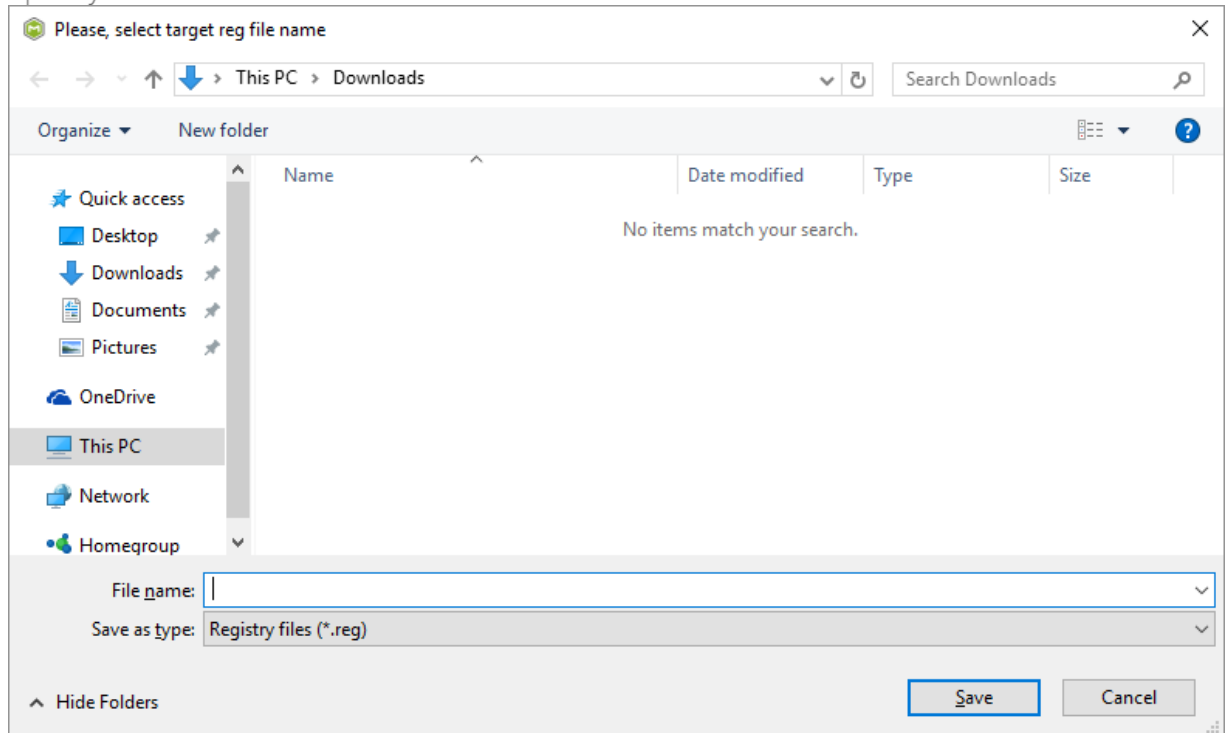
[1]. Open the Registry tab.



[2]. Select Export from the context menu of a registry entry, which you want to export to the REG file.



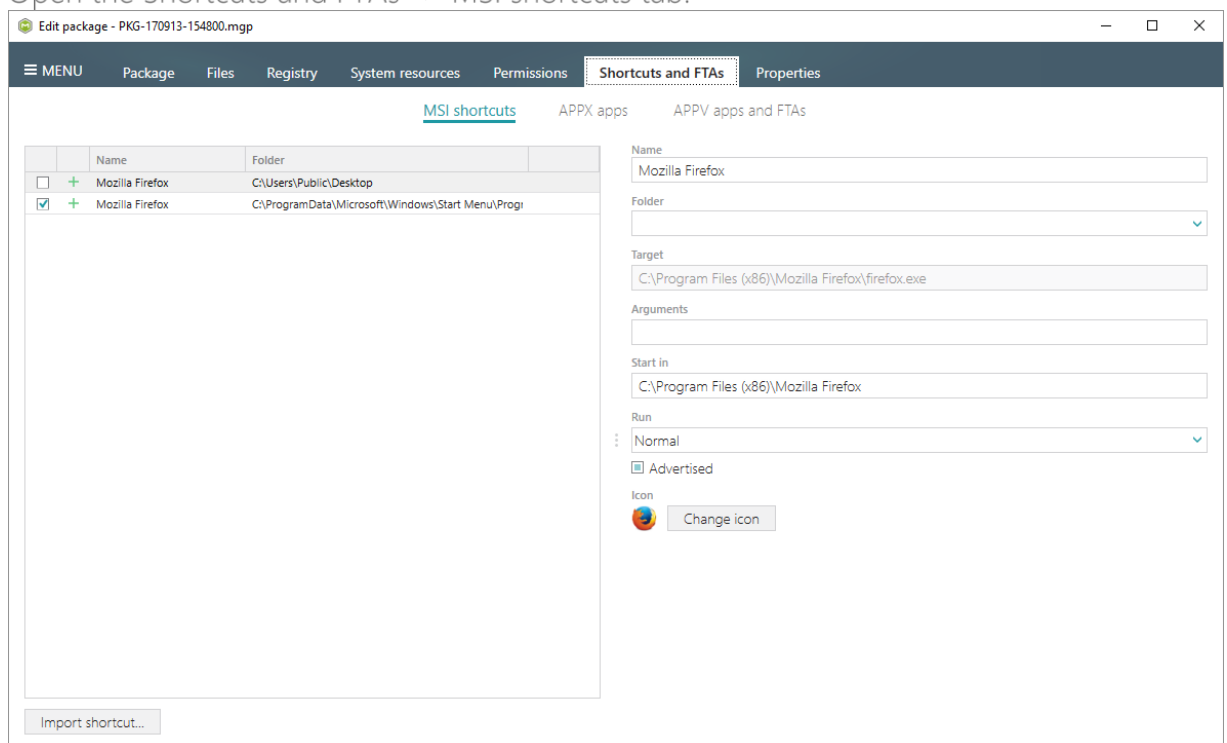
- [3]. Specify a name and a destination location of the REG file and click Save.



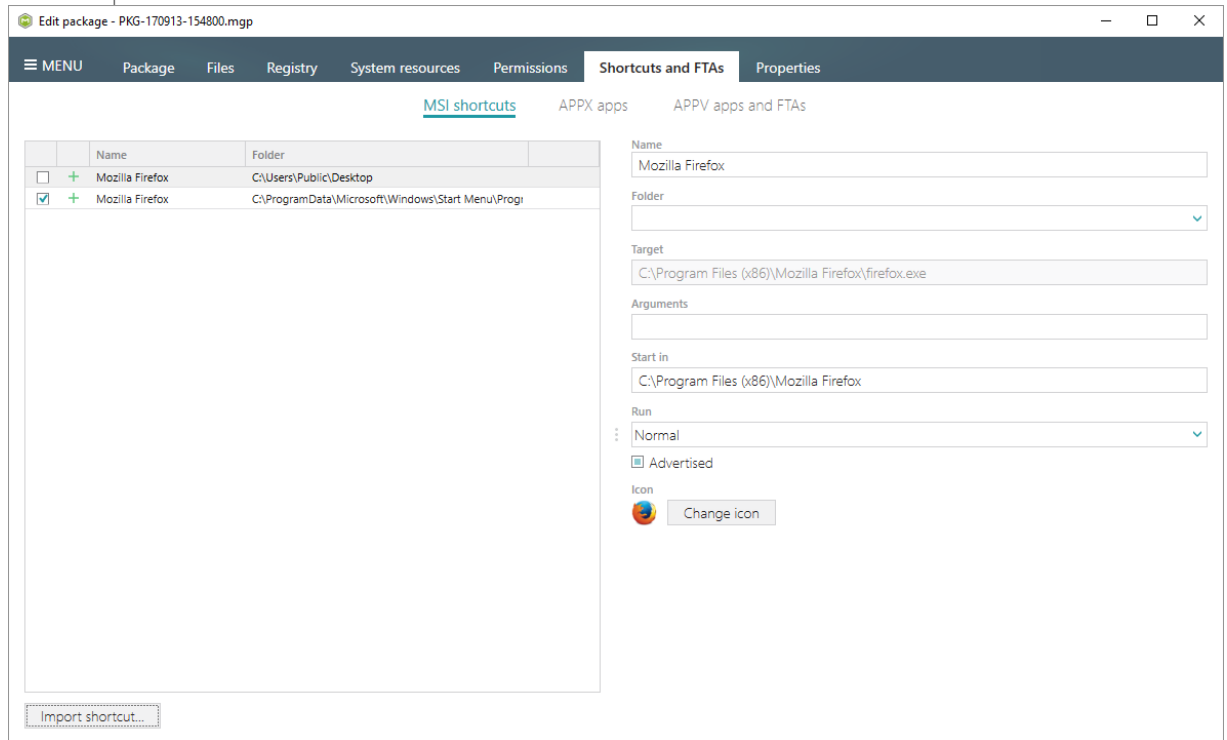
3.8.4 Shortcuts

3.8.4.1 Import Shortcut

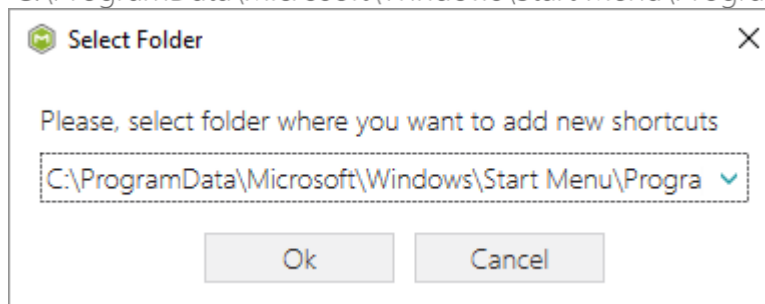
- [1]. Open the Shortcuts and FTAs -> MSI shortcuts tab.



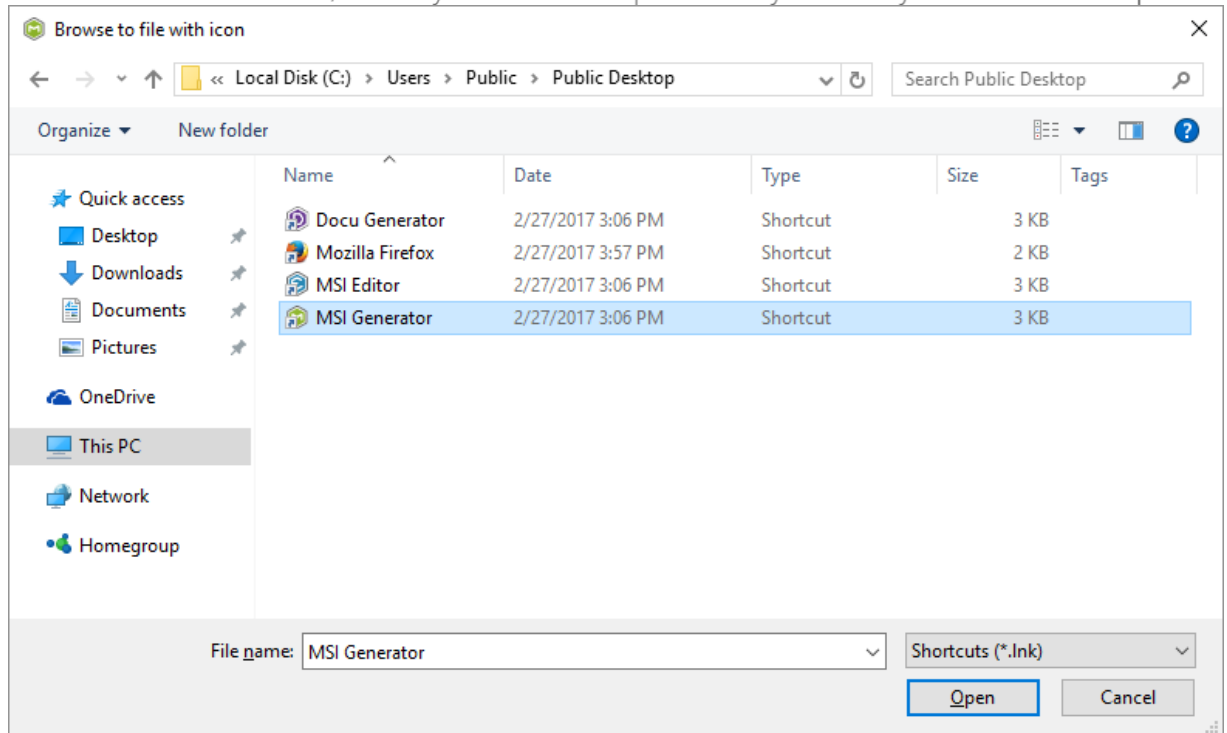
[2]. Click Import shortcut...



[3]. Select a folder, to which you want to import shortcuts (e.g. 'C:\ProgramData\Microsoft\Windows\Start Menu\Programs') and click Ok.

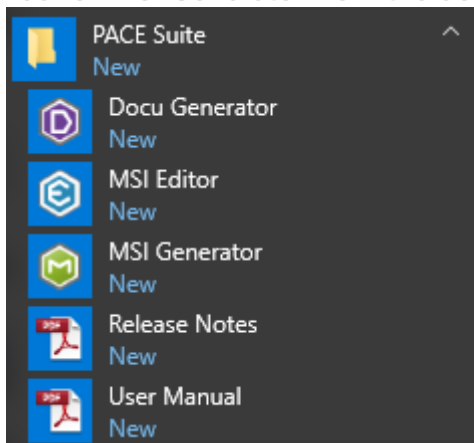


- [4]. Choose an LNK shortcut, which you want to import from your file system and click Open.

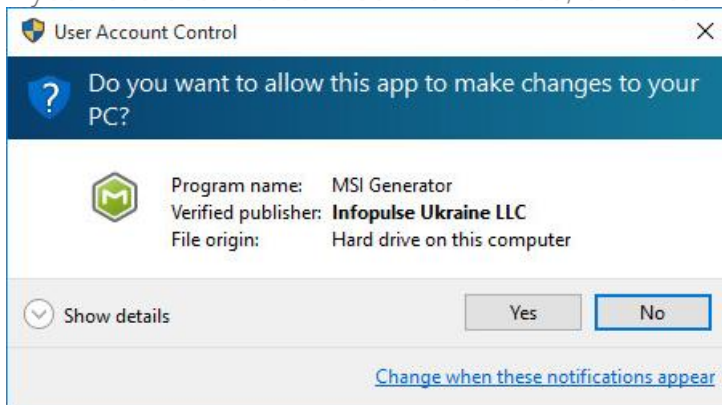


3.9 Edit App-V

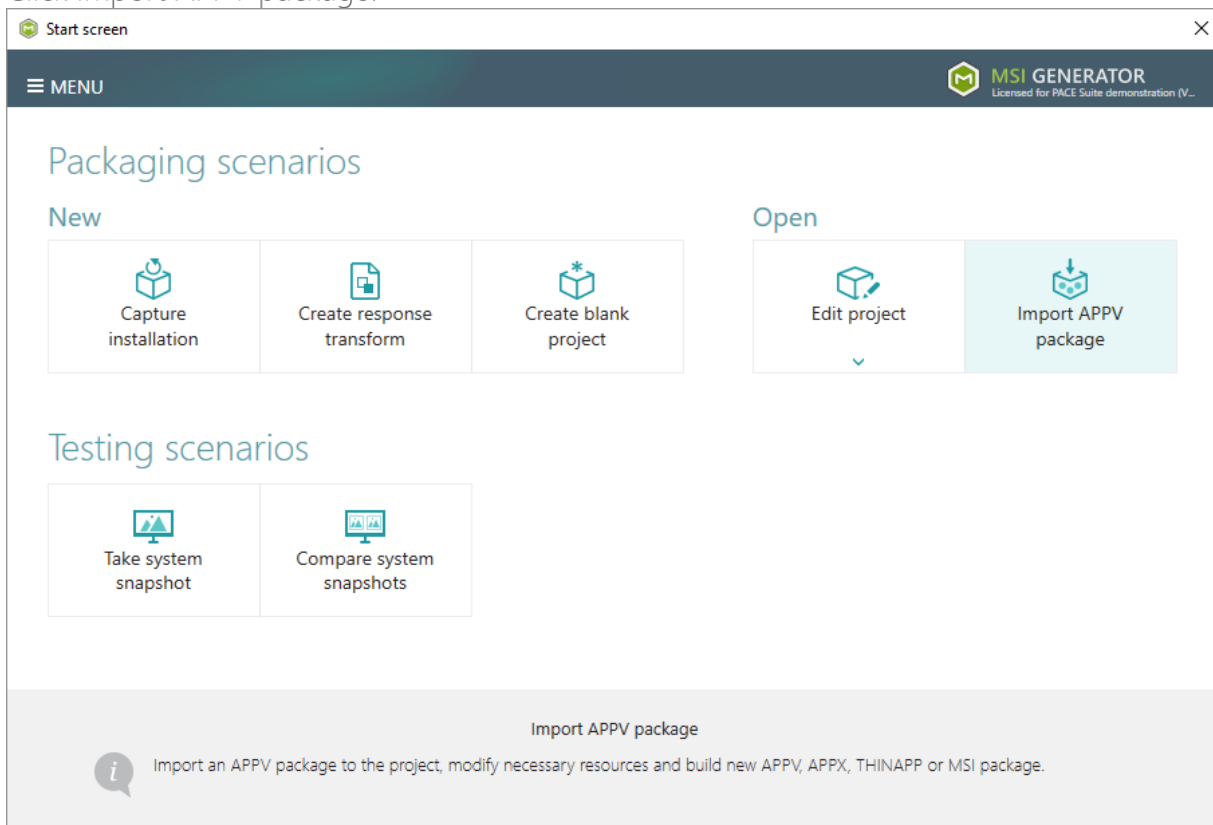
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



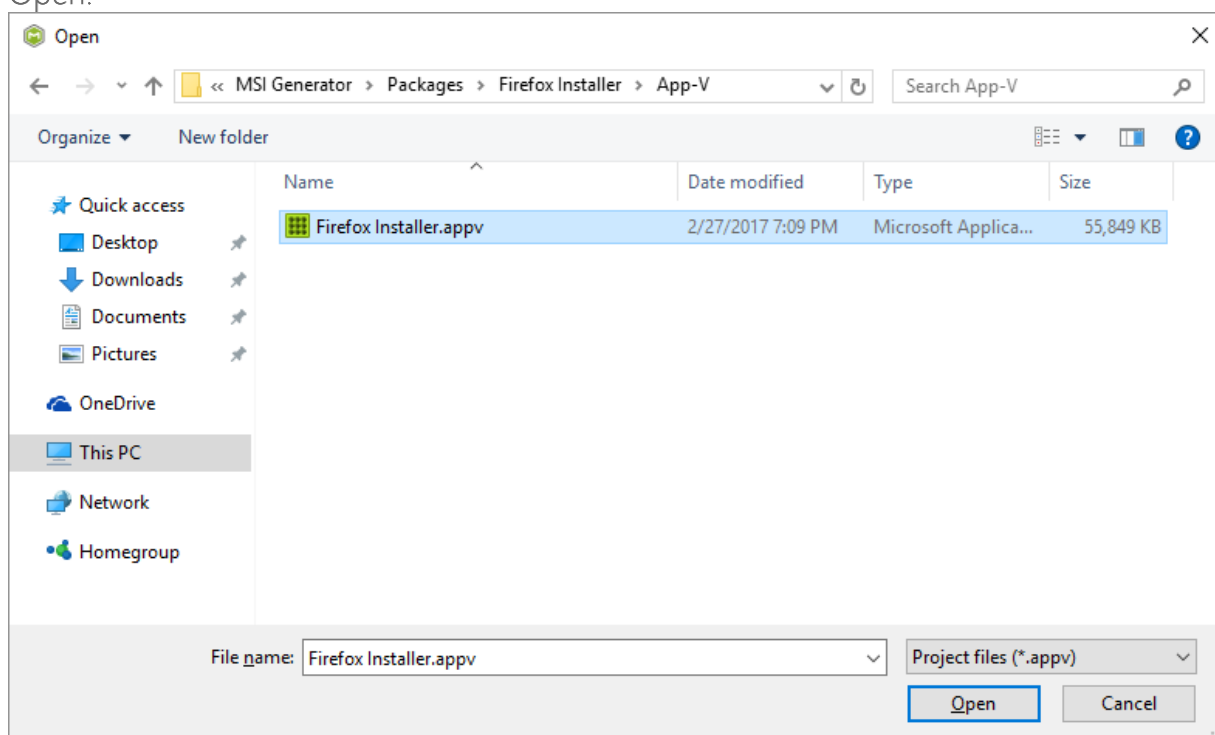
- [2]. If you have User Account Control enabled, click Yes in the opened window.



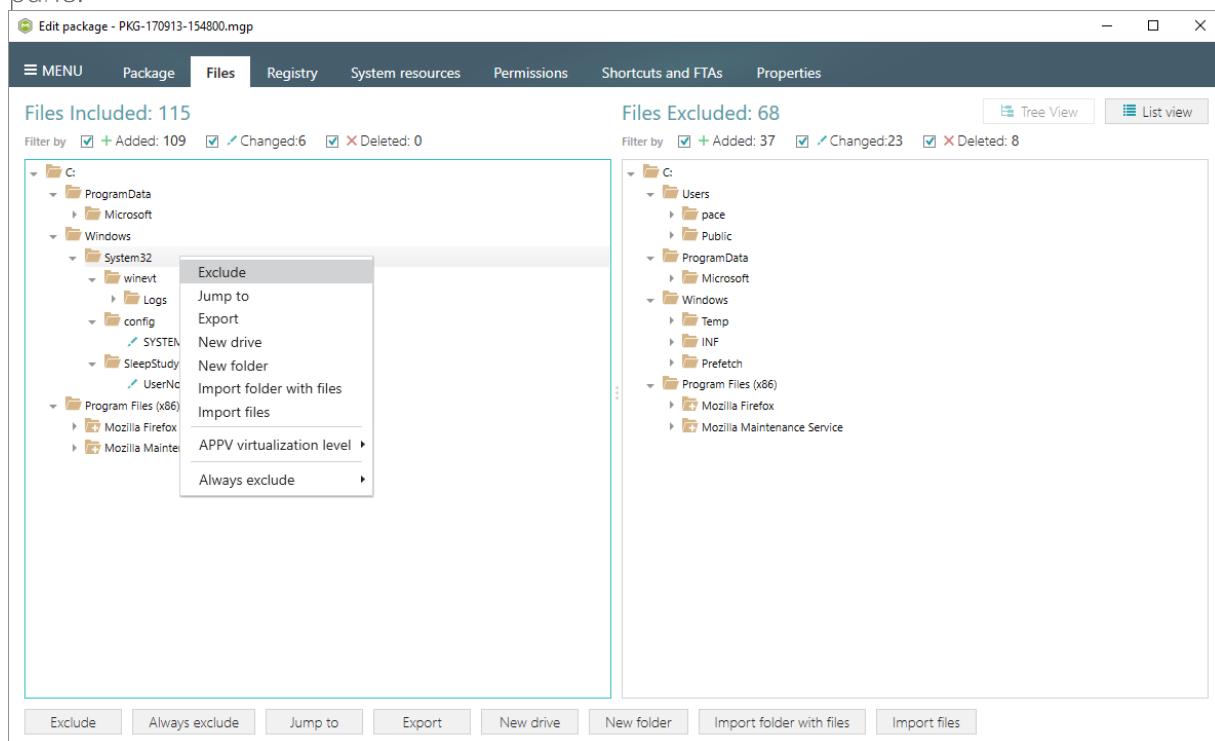
- [3]. Click Import APPV package.



- [4]. Choose an App-V package (APPV file), which you want to edit from your file system and Open.

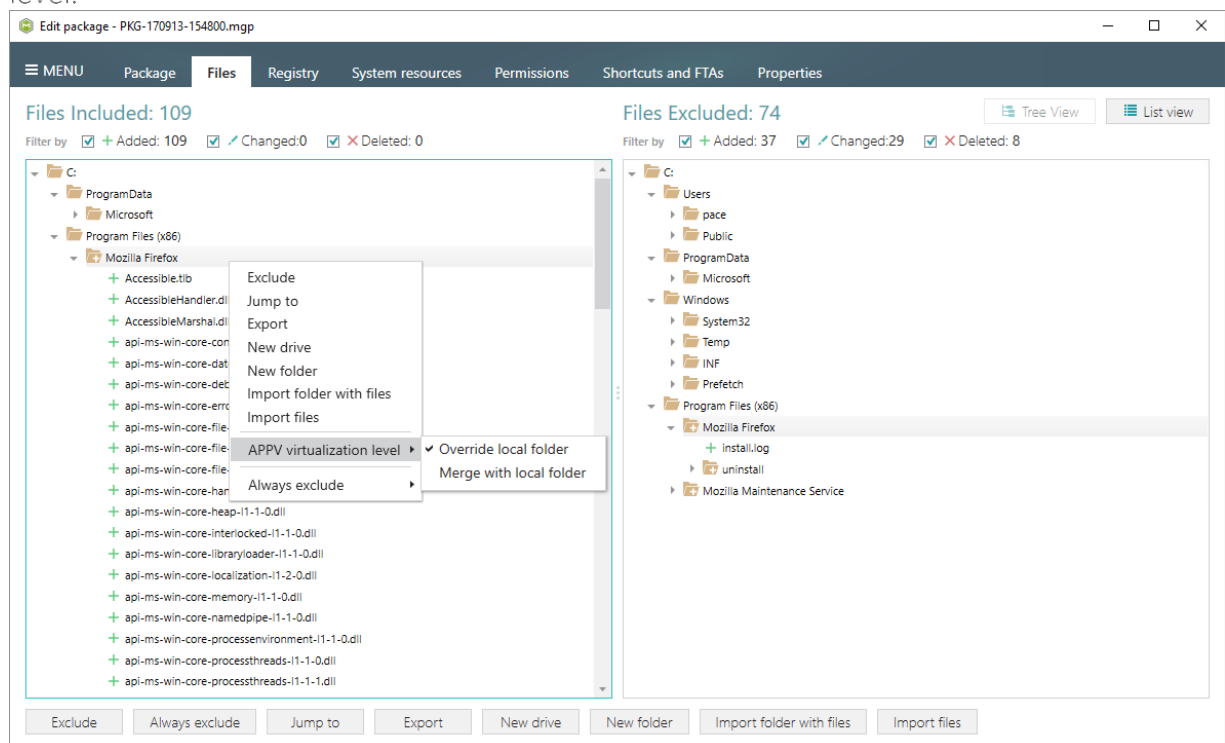


- [5]. In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included' pane.

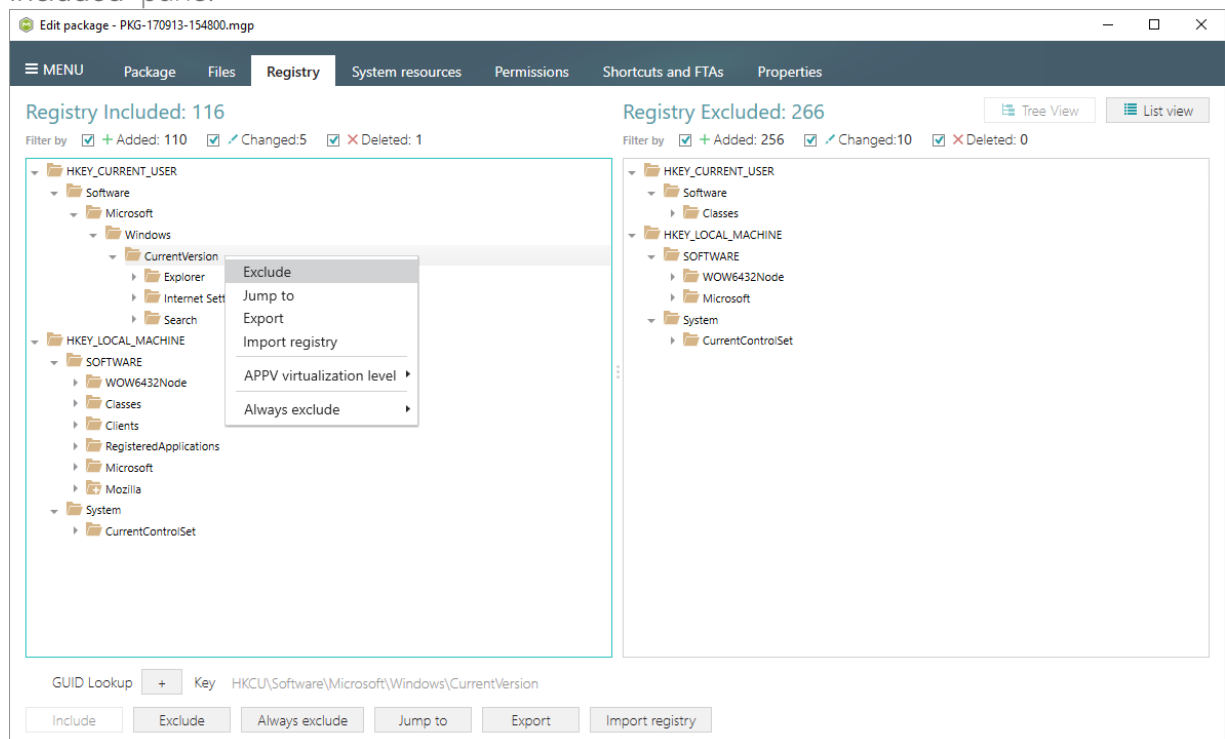


- [6]. In order to change the default virtualization (isolation) level of a folder, open the folder context menu, and select either **Override local folder** or **Merge with local folder** option from the APPV virtualization level submenu. Note that if the APPV virtualization level submenu is disabled with the **Override local folder** option selected, it means that this

option is inherited from the parent folder. Child folder could not have the Merge with local folder virtualization level, if parent one has the Override local folder virtualization level.

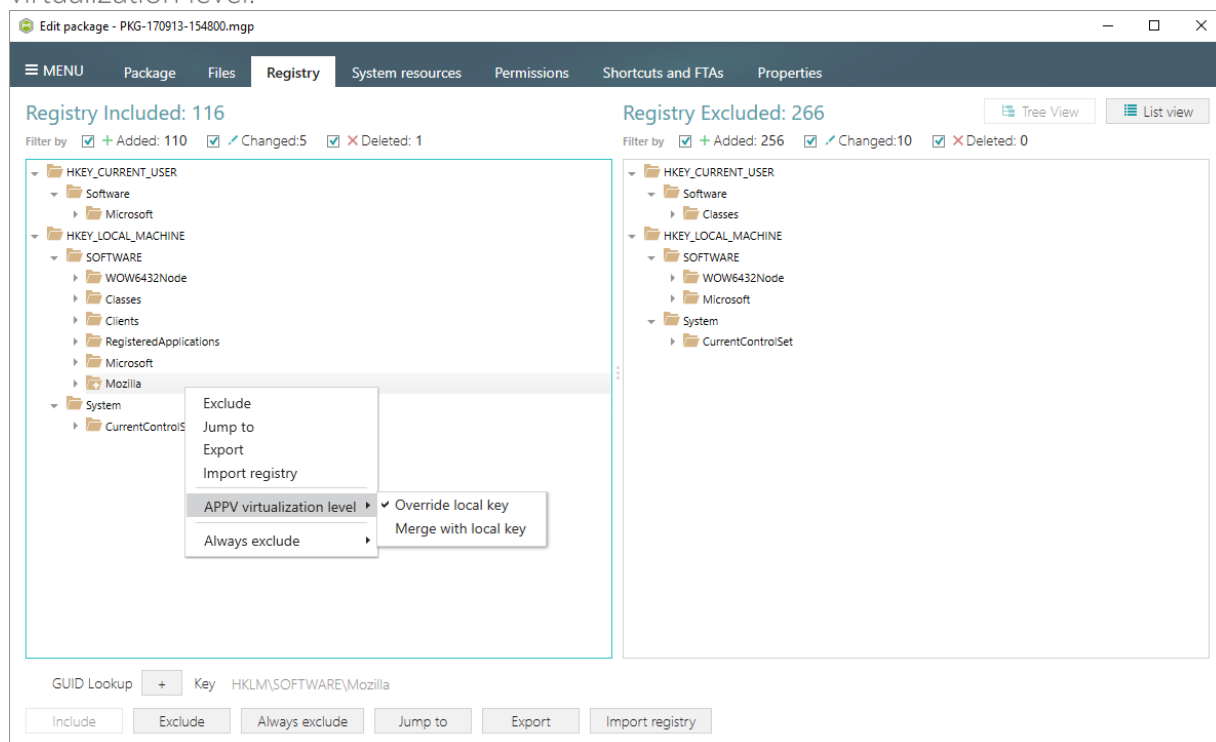


- [7]. In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select Exclude from the context menu of an item, which is located in the left 'Registry Included' pane.

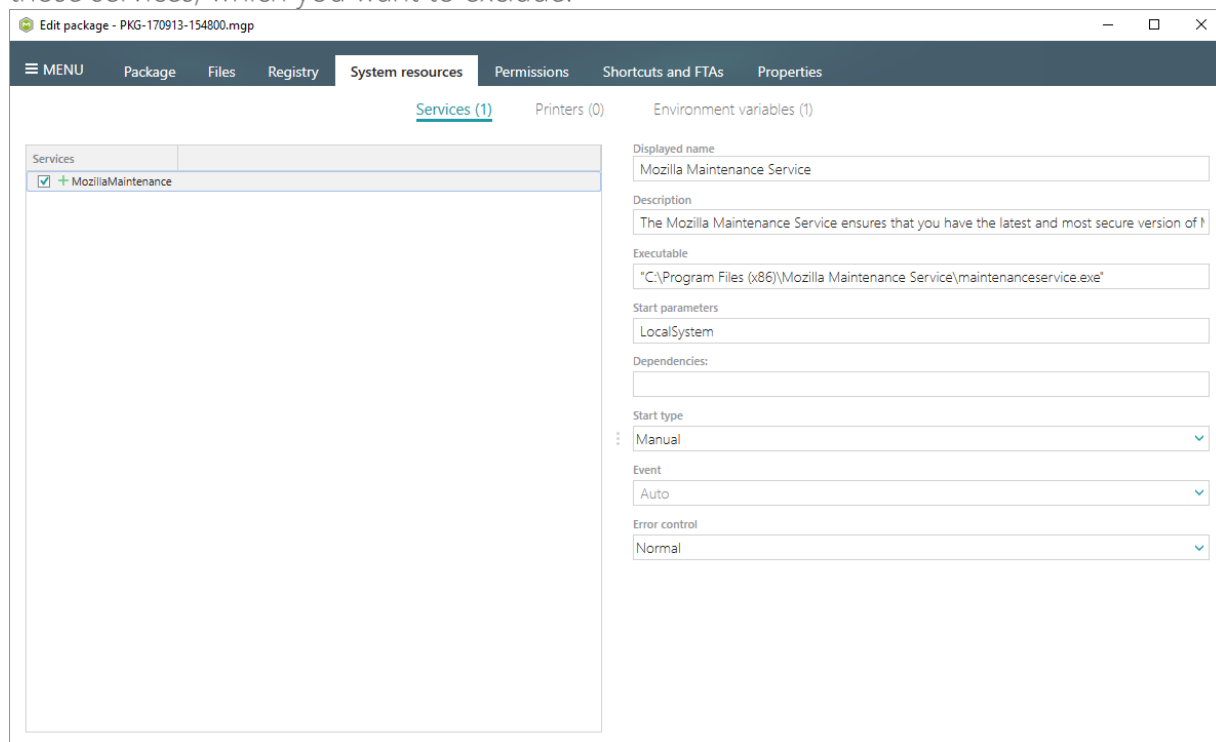


- [8]. In order to change the default virtualization (isolation) level of a registry key, open the registry key context menu, and select either Override local key or Merge with local key option from the APPV virtualization level submenu. Note that if the APPV virtualization

level submenu is disabled with the **Override local key** option selected, it means that this option is inherited from the parent registry key. A child registry key could not have the **Merge with local key** virtualization level, if the parent one has the **Override local key** virtualization level.



- [9]. In order to review and exclude unnecessary services, go to the **System resources** -> **Services** tab, and uncheck the checkbox, located before the service name in the list, for those services, which you want to exclude.



- [10]. In order to review and exclude unnecessary APPV applications, shortcuts and their file type associations, go to the **Shortcuts and FTAs** -> **APPV apps and FTAs** tab, and

uncheck checkboxes, located before those items names, which you want to exclude.

Application

Application
<input checked="" type="checkbox"/> firefox

New application...

Application

Name: firefox

Version: 55.0.3

Application path: C:\Program Files (x86)\Mozilla Firefox\firefox.exe Browse...

Shortcuts

	Name	Folder
<input type="checkbox"/>	Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/>	Mozilla Firefox	C:\ProgramData\Microsoft\Win...

Exclude New... Edit...

File Type Association

Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

- [11]. If you need to add a new APPV application, its shortcuts and associate file extensions with this application, click **New application...** on the **Shortcuts and FTAs** -> **APPV apps and FTAs** tab.

Application

Application
<input checked="" type="checkbox"/> firefox

New application...

Application

Name: firefox

Version: 55.0.3

Application path: C:\Program Files (x86)\Mozilla Firefox\firefox.exe Browse...

Shortcuts

	Name	Folder
<input type="checkbox"/>	Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/>	Mozilla Firefox	C:\ProgramData\Microsoft\Win...

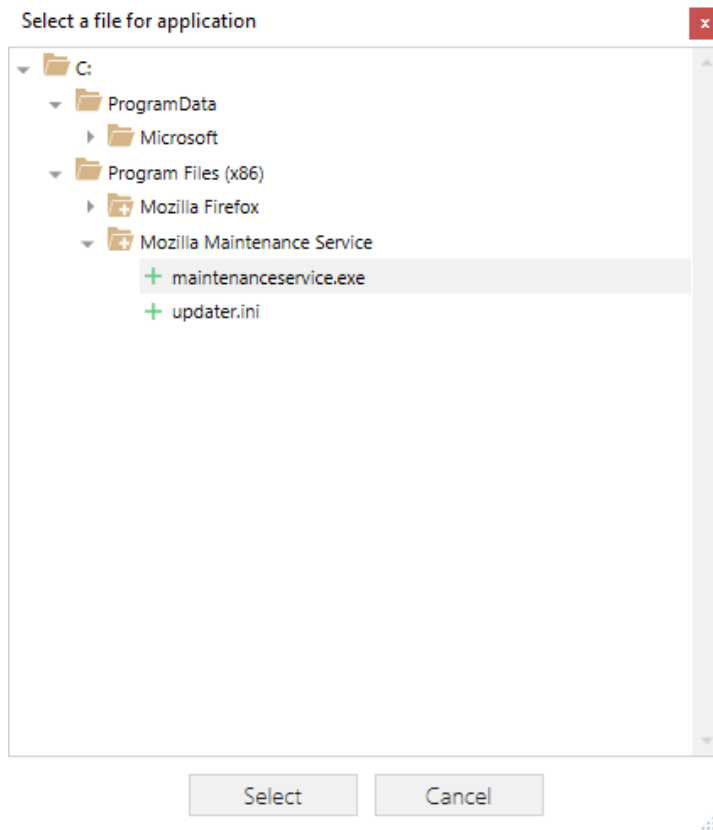
Exclude New... Edit...

File Type Association

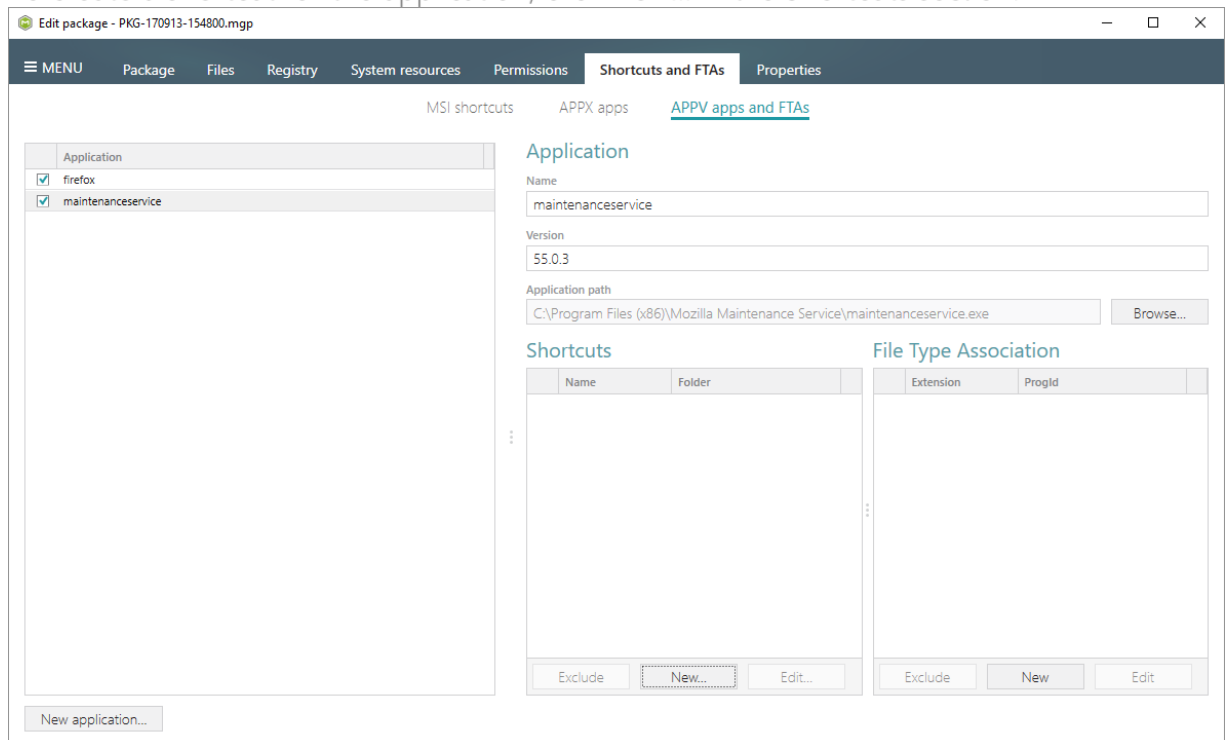
Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

[12]. Select the executable file (EXE) from the tree and click **Select**.



[13]. To create a shortcut for the application, click **New...** in the Shortcuts section.



[14]. Enter a shortcut name, select a destination location ("Folder" field), icon and click **Save**.

Shortcut

Name
Mozilla Maintenance Service

Folder
C:\ProgramData\Microsoft\Windows\Start Menu\Programs

Arguments

Start in
C:\Program Files (x86)\Mozilla Maintenance Service

Run
Normal

Icon
Change icon

Save Cancel

[15]. To associate some file extension with your application, click **New...** in the File Type Association section.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions **Shortcuts and FTAs** Properties

MSI shortcuts APPX apps APPV apps and FTAs

Application

Application
<input checked="" type="checkbox"/> firefox
<input checked="" type="checkbox"/> maintenanceservice

New application...

Application

Name
maintenanceservice

Version
55.0.3

Application path
C:\Program Files (x86)\Mozilla Maintenance Service\maintenanceservice.exe Browse...

Shortcuts

	Name	Folder
<input checked="" type="checkbox"/>	Mozilla Maintenance	C:\ProgramData\Microsoft\Win...

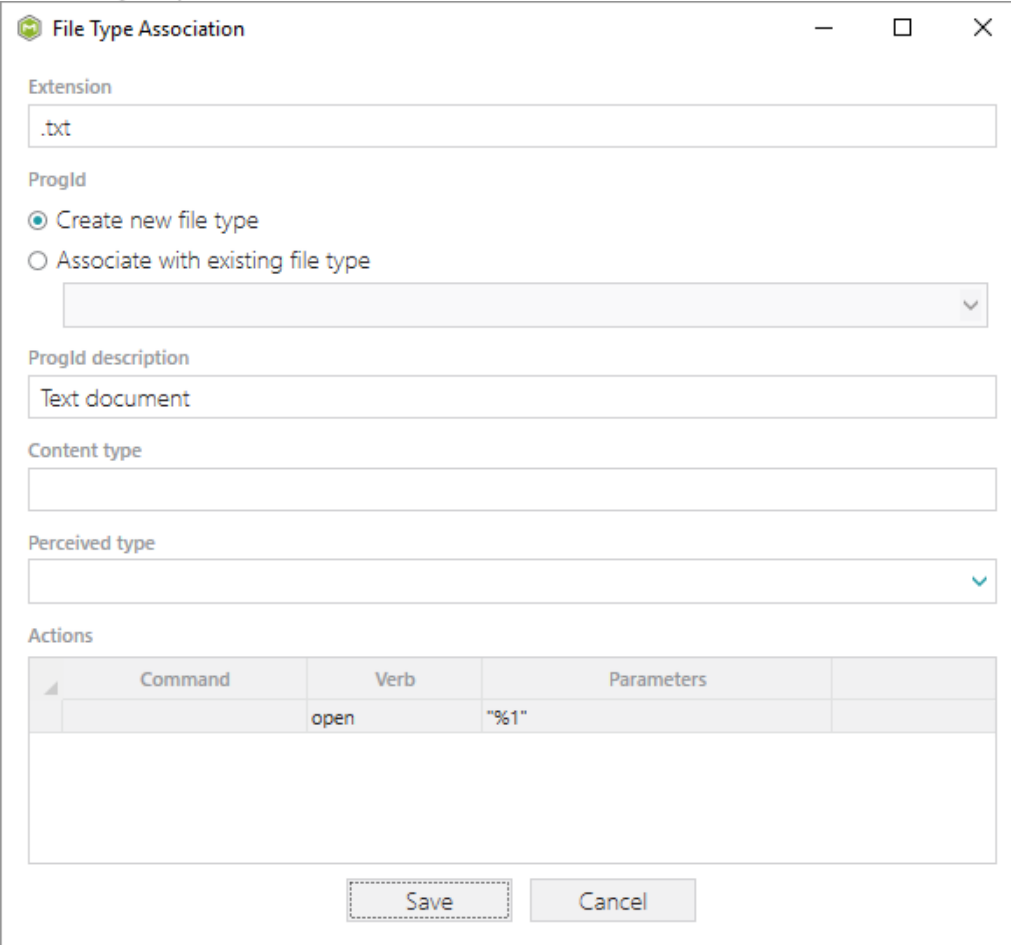
Exclude New... Edit...

File Type Association

Extension	ProgId
-----------	--------

Exclude New Edit

- [16]. Enter a file extension and click **Save**. Optionally you can modify other FTA settings according to your needs.



File Type Association

Extension

ProgId
☒ Create new file type
☐ Associate with existing file type

ProgId description

Content type

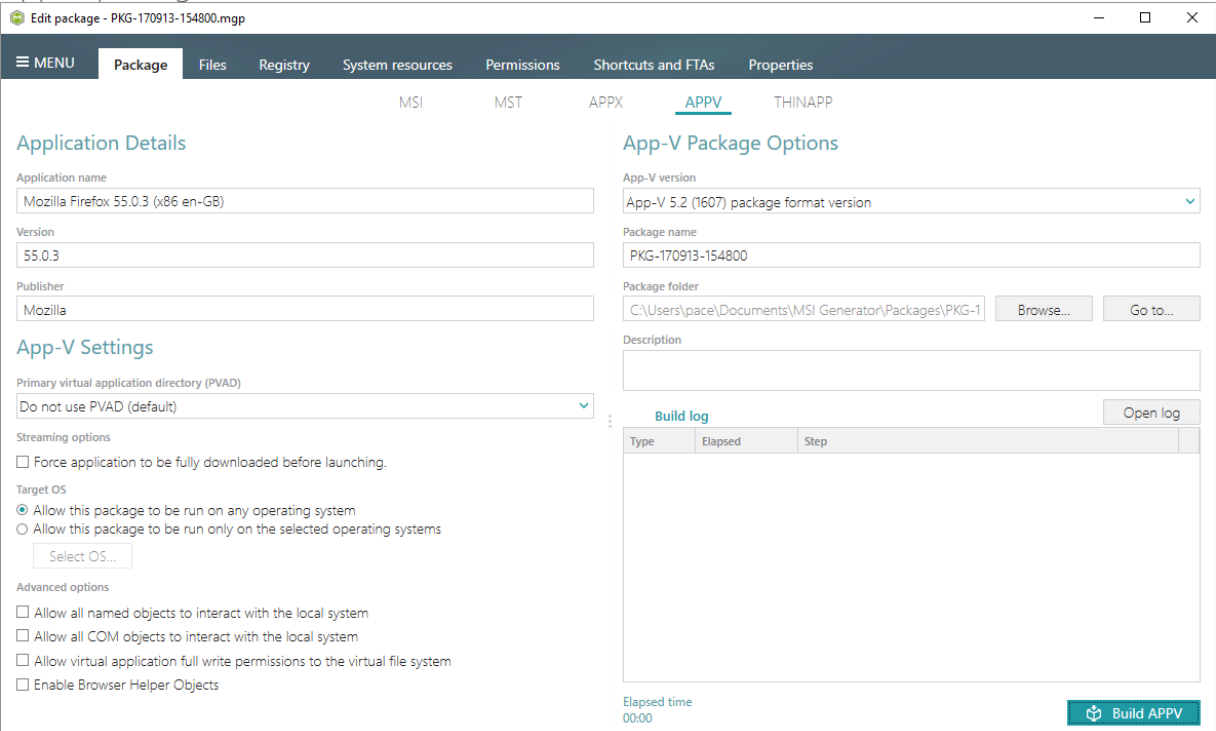
Perceived type

Actions

Command	Verb	Parameters
	open	"%1"

Save **Cancel**

- [17]. Finally, to build APPV package from the project, navigate to the **Package -> APPV** tab, review and update (if necessary) **Application Details**, select the necessary **App-V Settings**, **App-V** package format version, and then click **Build APPV**.



Edit package - PKG-170913-154800.mgp

MENU **Package** **Files** **Registry** **System resources** **Permissions** **Shortcuts and FTAs** **Properties**

MSI MST APPX **APPV** THINAPP

Application Details

Application name

Version

Publisher

App-V Settings

Primary virtual application directory (PVAD)

Streaming options
☐ Force application to be fully downloaded before launching.

Target OS
☒ Allow this package to be run on any operating system
☐ Allow this package to be run only on the selected operating systems

Advanced options
☐ Allow all named objects to interact with the local system
☐ Allow all COM objects to interact with the local system
☐ Allow virtual application full write permissions to the virtual file system
☐ Enable Browser Helper Objects

App-V Package Options

App-V version

Package name

Package folder

Description

Build log

Type	Elapsed	Step
------	---------	------

Elapsed time
 00:00

- [18]. Click **Go to...**, located next to the **Project folder** field, to open the package containing folder in Windows Explorer.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Version: 55.0.3

Publisher: Mozilla

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: PKG-170913-154800

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 **Browse...** **Go to...**

Description:

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

- ☐ Force application to be fully downloaded before launching.

Target OS:

- ☒ Allow this package to be run on any operating system
- ☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

- ☐ Allow all named objects to interact with the local system
- ☐ Allow all COM objects to interact with the local system
- ☐ Allow virtual application full write permissions to the virtual file system
- ☐ Enable Browser Helper Objects

Build log

Type	Elapsed	Step
	00:00:37	Operation was completed successfully
	00:00:18	Saving package
	00:00:18	Processing software clients
	00:00:18	Processing environment variables
	00:00:18	Processing URL protocols
	00:00:18	Processing application capabilities
	00:00:18	Processing FTAs
	00:00:18	Processing browser plugins
	00:00:18	Processing COM objects
	00:00:18	Processing services
	00:00:18	Processing registry

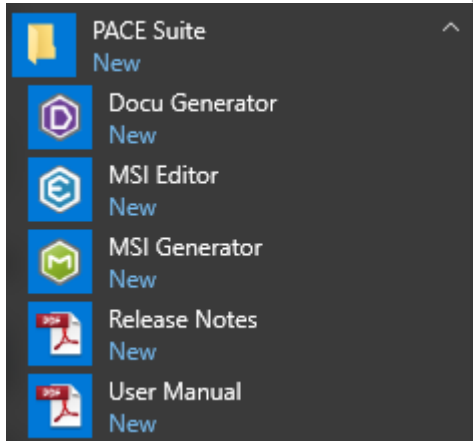
Elapsed time: 00:00:38

Build APPV

3.10 Publish Package to SCCM

NOTE For publishing MSI packages to Microsoft SCCM 2007 (SP1/SP2/R1/R2) or SCCM 2012 (SP1/SP2/R2/R2 SP1) server, ensure that your system contains Microsoft Management Framework 3.0 and Windows Remote Management (WinRM) service enabled.

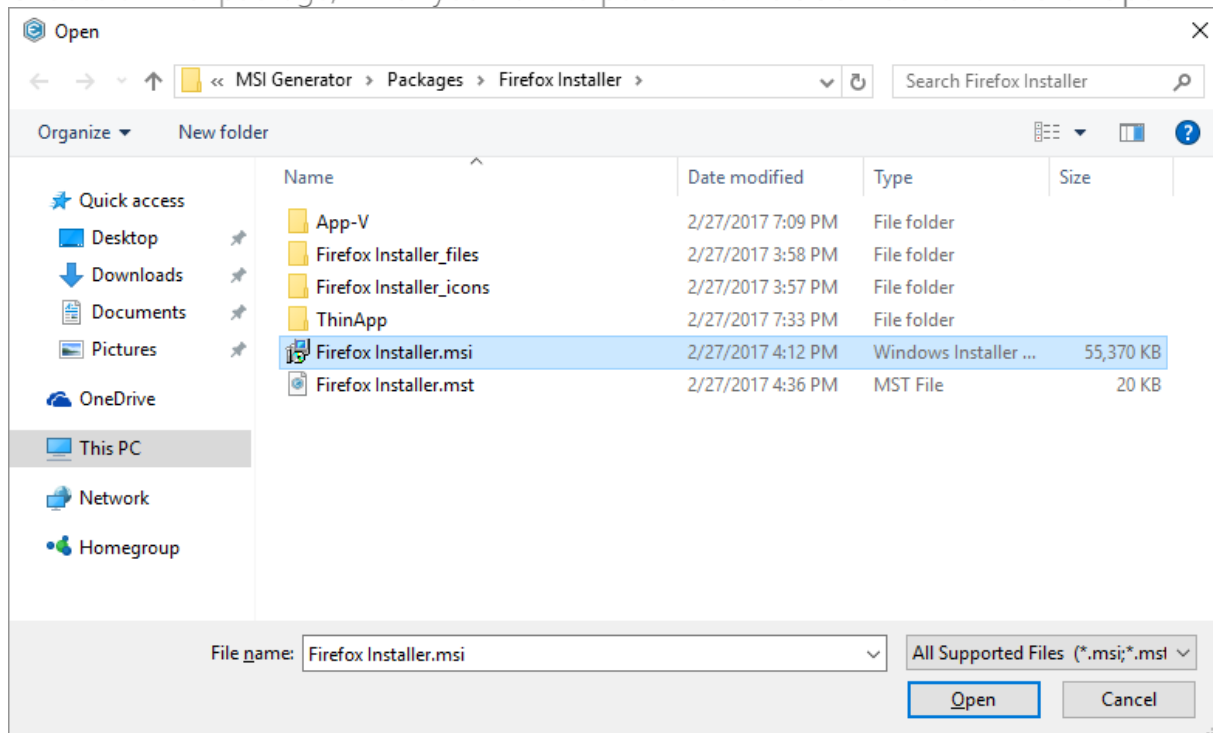
- [1]. Launch MSI Editor from the desktop or the start menu shortcut.



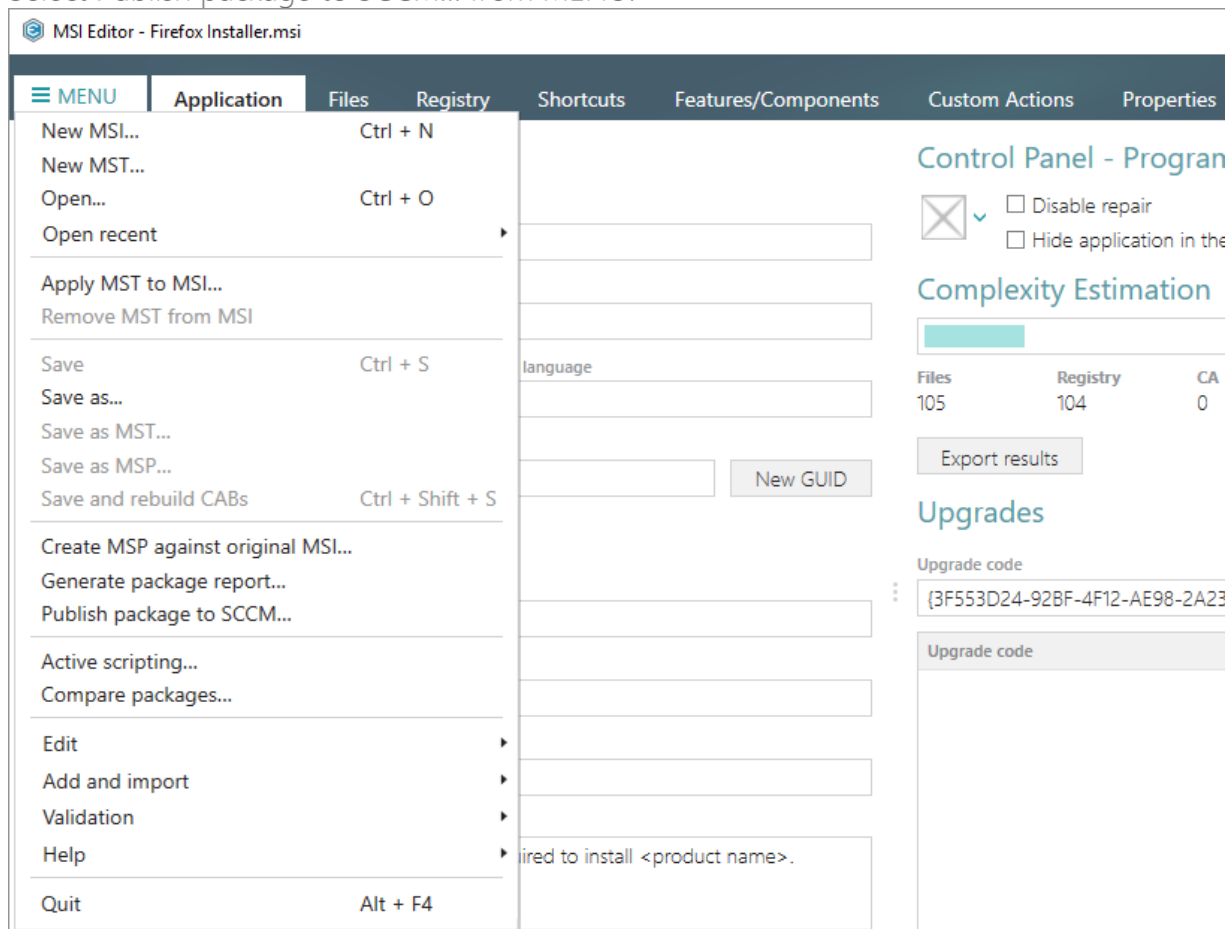
- [2]. Select Open... from MENU.



- [3]. Choose an MSI package, which you want to publish to the SCCM server and click Open.



- [4]. Select Publish package to SCCM... from MENU.



- [5]. Specify an IP address or a hostname of your SCCM server, user name and password for connecting to the SCCM. Enter a network share, where the package should be uploaded, and credentials for connecting to the network share. Click **Next** to choose a publishing

model. Click **Test connections...** to check connections to the SCCM server and network share.

Publish package to SCCM

SCCM server Package definition Display information Publish options Select files Publishing

SCCM server and network share settings

Specify an IP address or hostname of SCCM server

SCCM server

User name Password

☐ Use Windows session credentials

Specify a network share where packages will be uploaded

Network share for packages

User name Password

☐ Use Windows session credentials


[Test connections...](#)

< Back Next > Cancel

[6]. Select a suitable publishing model and click **Next**.

The screenshot shows a wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the current step is "Package definition", which is highlighted with a blue checkmark. The progress bar has six steps: "SCCM server", "Package definition", "Display information", "Publish options", "Select files", and "Publishing". Below the progress bar, the section "Package definition configuration" contains two radio button options:

- ☒ Publish as a package
The classic way SCCM has used in the past for deploying software to devices and is fully supported in SCCM 2007-2012
- ☐ Publish as an application (recommended for SCCM 2012)
This way is supported only by SCCM 2012. Applications are similar to packages, but contain more information to support smart deployment

Below the options, a warning message is displayed:  Warning! Version of the specified SCCM server could not be detected.

At the bottom right, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

- [7]. Review and update package display information such as name, manufacturer, version and others. Click **Next** to choose publish options.

The screenshot shows a wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the current step is "Display information", which is highlighted with a blue circle and text. The other steps in the sequence are "SCCM server", "Package definition", "Publish options", "Select files", and "Publishing", each marked with a grey circle. Below the progress bar, the "Display information" section contains several text input fields: "Name" (filled with "Mozilla Firefox 51.0.1 (x86 en-US)"), "Manufacturer" (filled with "Mozilla"), "Version" (filled with "51.0.1"), "Language" (filled with "English"), and "Description" (filled with "Mozilla - Mozilla Firefox 51.0.1 (x86 en-US) - 51.0.1"). At the bottom right, there are three buttons: "< Back" (disabled), "Next >" (active, with a dashed border), and "Cancel" (disabled).

Publish package to SCCM

SCCM server Package definition **Display information** Publish options Select files Publishing

Display information

Name
Mozilla Firefox 51.0.1 (x86 en-US)

Manufacturer
Mozilla

Version
51.0.1

Language
English

Description
Mozilla - Mozilla Firefox 51.0.1 (x86 en-US) - 51.0.1

< Back **Next >** Cancel

[8]. Select the necessary publish options and click Next.

Publish package to SCCM

Progress bar steps: SCCM server, Package definition, Display information, **Publish options**, Select files, Publishing

Publish options

Installation behavior
Install for system

Logon requirement
Whether or not a user is logged on

Device restart
Determine behavior based on return codes

Maximum allowed run time (minutes)
120

< Back Next > Cancel

- [9]. Select which of files and folders, located in the package folder, should be copied to the network share and click **Next** to publish your package to the SCCM server.

The screenshot shows a wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the current step is "Select files", which is highlighted in blue. The other steps are "SCCM server", "Package definition", "Display information", "Publish options", and "Publishing".

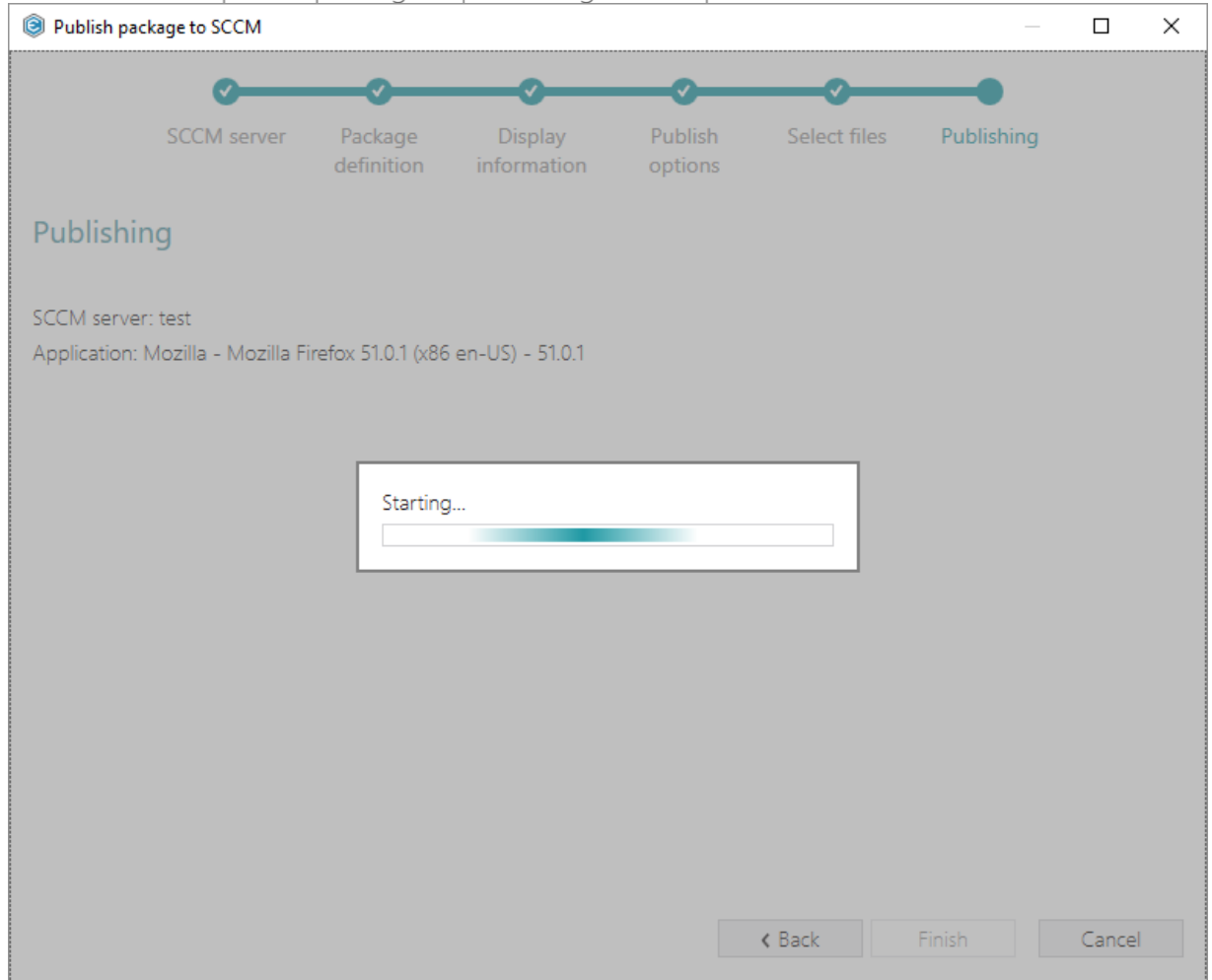
Below the progress bar, the section "Select files" is displayed. It contains the instruction: "Select files which also should be copied to network share within the package".

A list of files and folders is shown with checkboxes:

- ☐ Select all/none
- ☐ App-V
- ☐ Firefox Installer_files
- ☐ Firefox Installer_icons
- ☐ ThinApp
- ☐ Firefox Installer 51.0.1 patch.msp
- ☐ Firefox Installer.mgp
- ☒ Firefox Installer.mst
- ☒ Firefox0.cab
- ☐ found_files.xml

At the bottom right, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

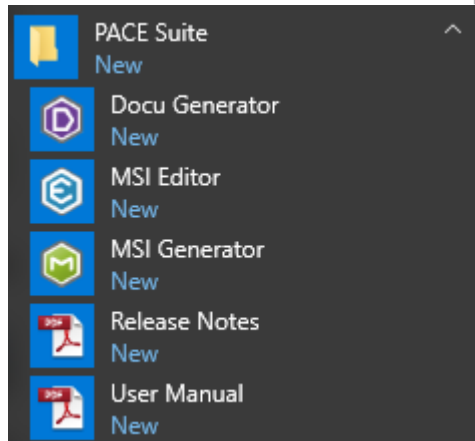
[10]. Wait while the opened package is publishing to the specified SCCM server.



3.11 Generate Package Report

NOTE PACE Suite supports Word Document (.DOCX) and Excel Workbook (.XLSX) format types and allows generating a report with no Microsoft Office installed on the system.

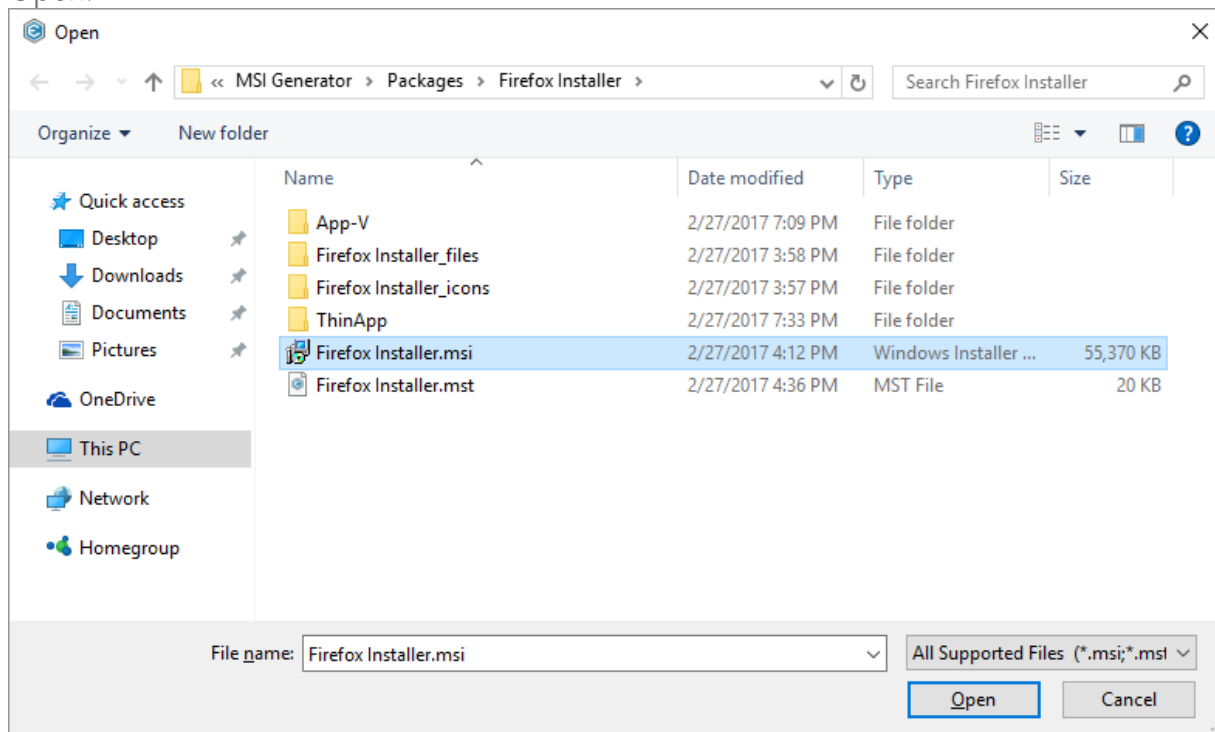
[1]. Launch MSI Editor from the desktop or the start menu shortcut.



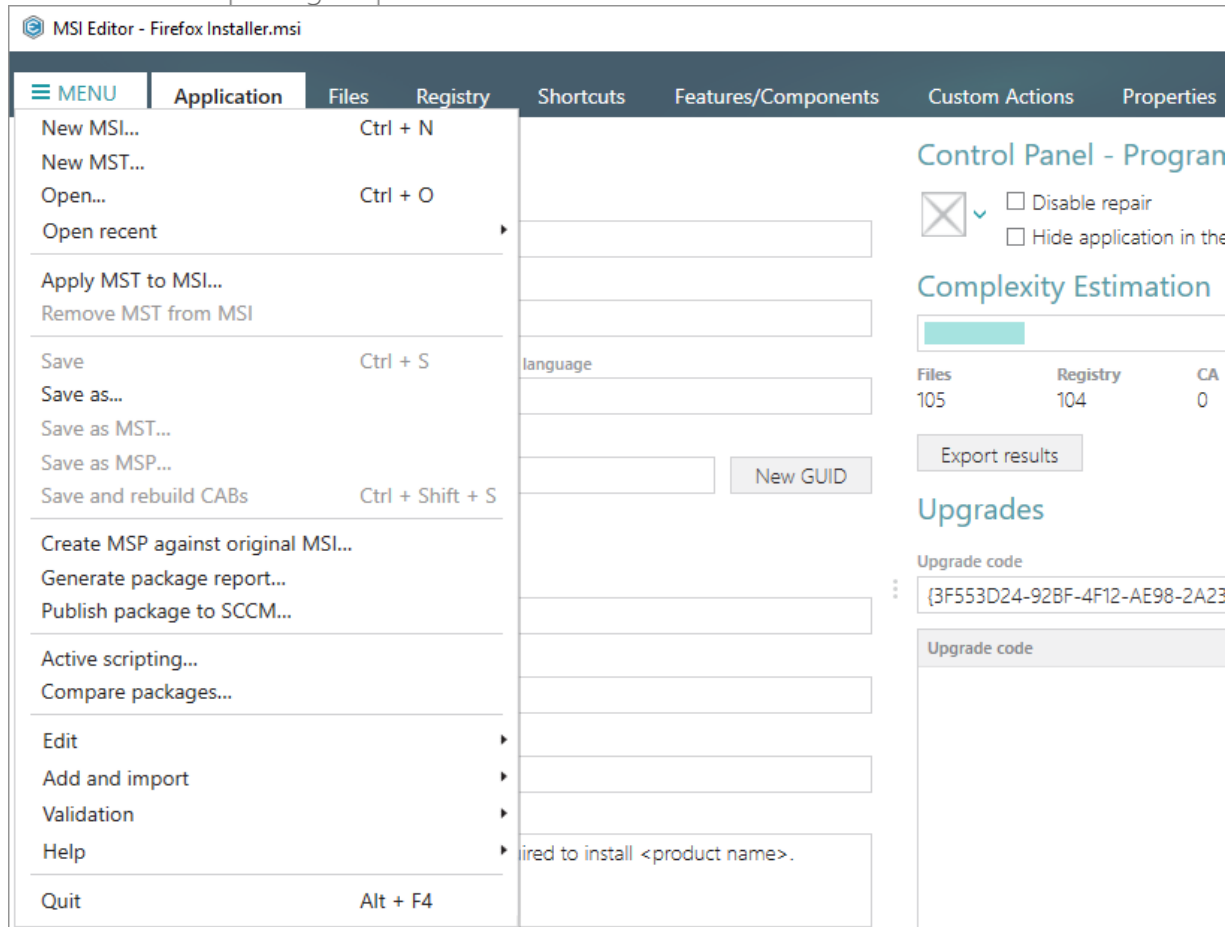
[2]. Select Open... from MENU.



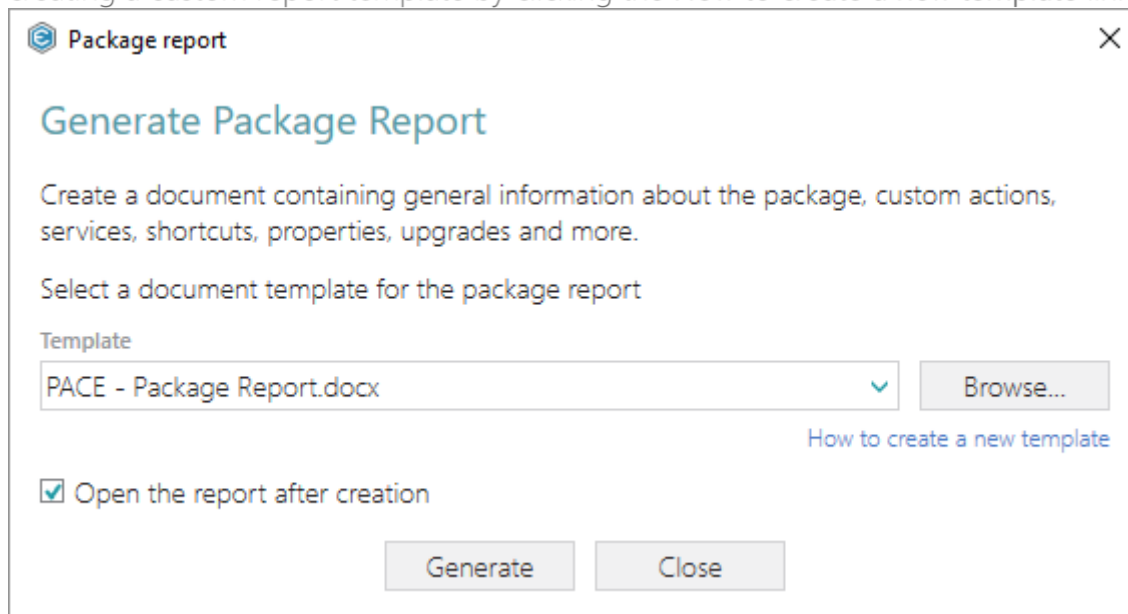
[3]. Choose an MSI package, for which you want to generate a package report and click Open.



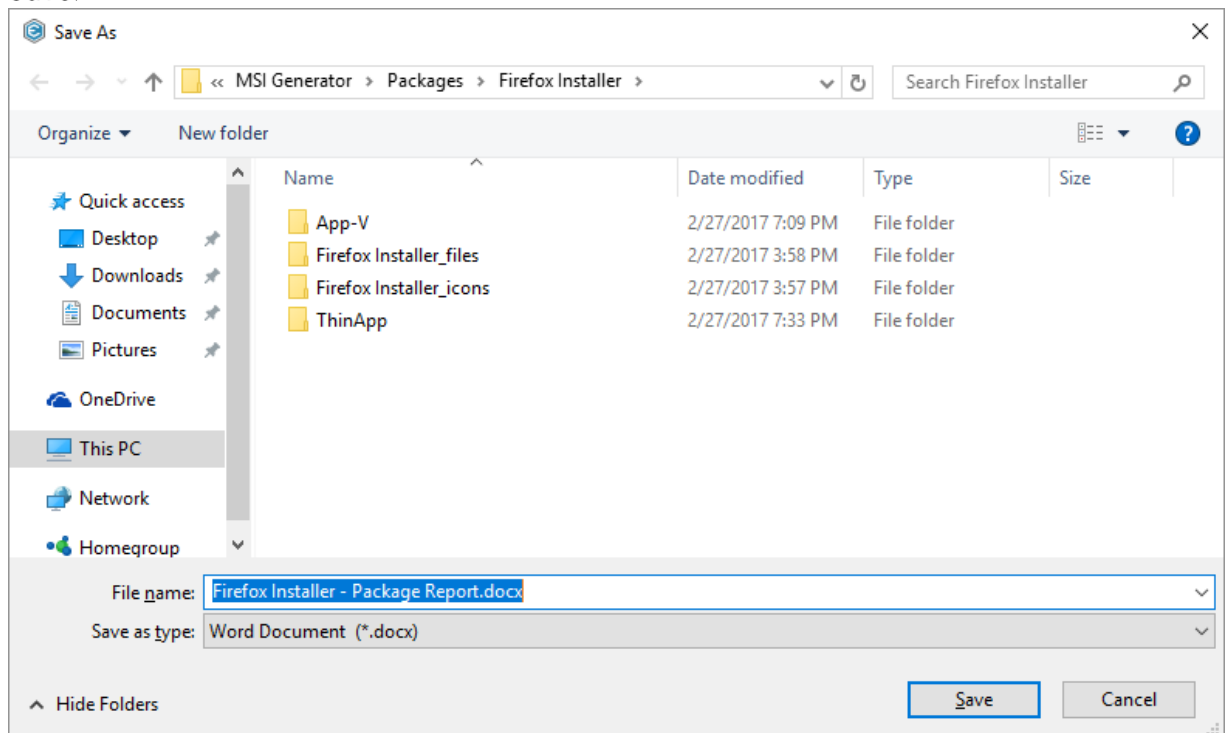
- [4]. Select Generate package report... from MENU.



- [5]. Select a template for your package and click Generate. Find more information about creating a custom report template by clicking the How to create a new template link.

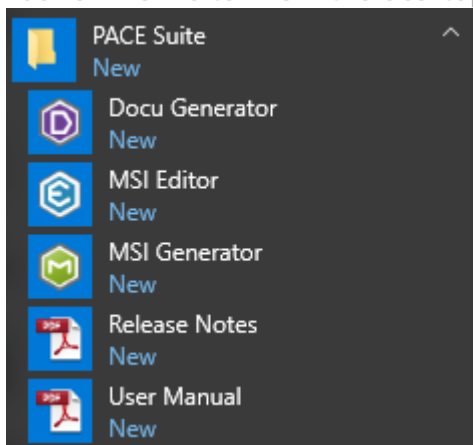


- [6]. Specify a file name and a destination location of the generated package report and click Save.



3.12 Validate Package

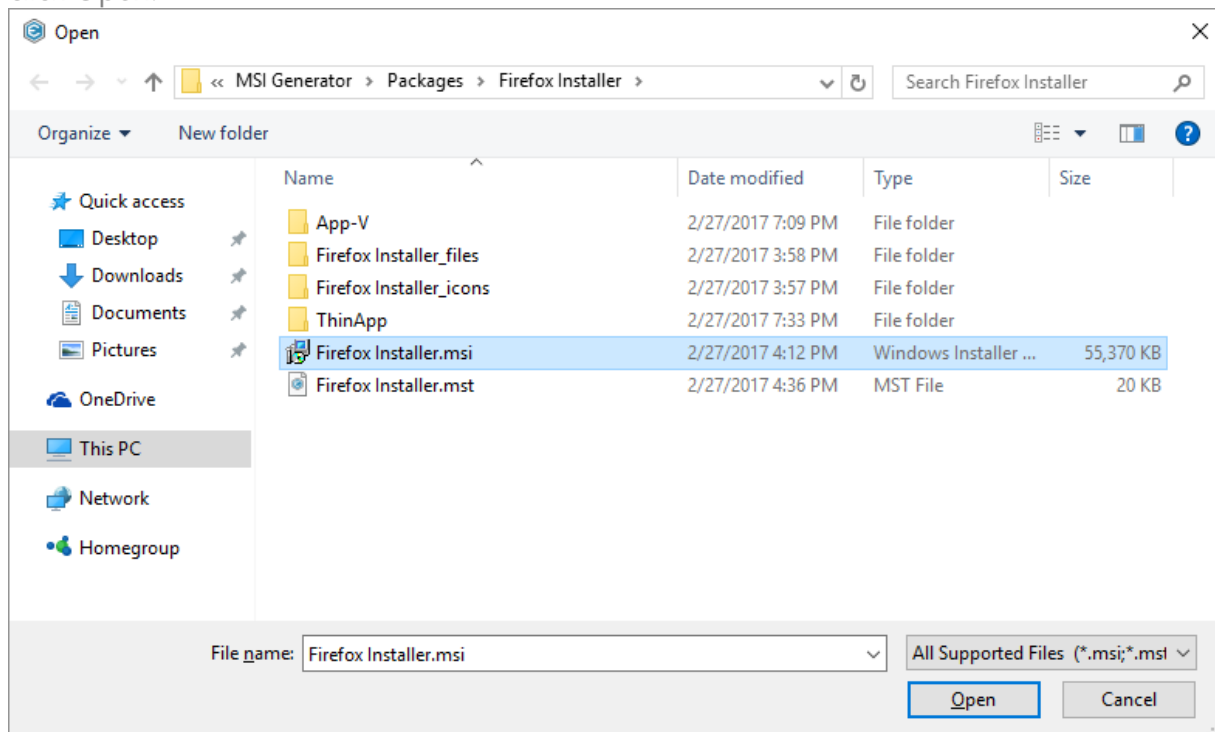
- [1]. Launch MSI Editor from the desktop or the start menu shortcut.



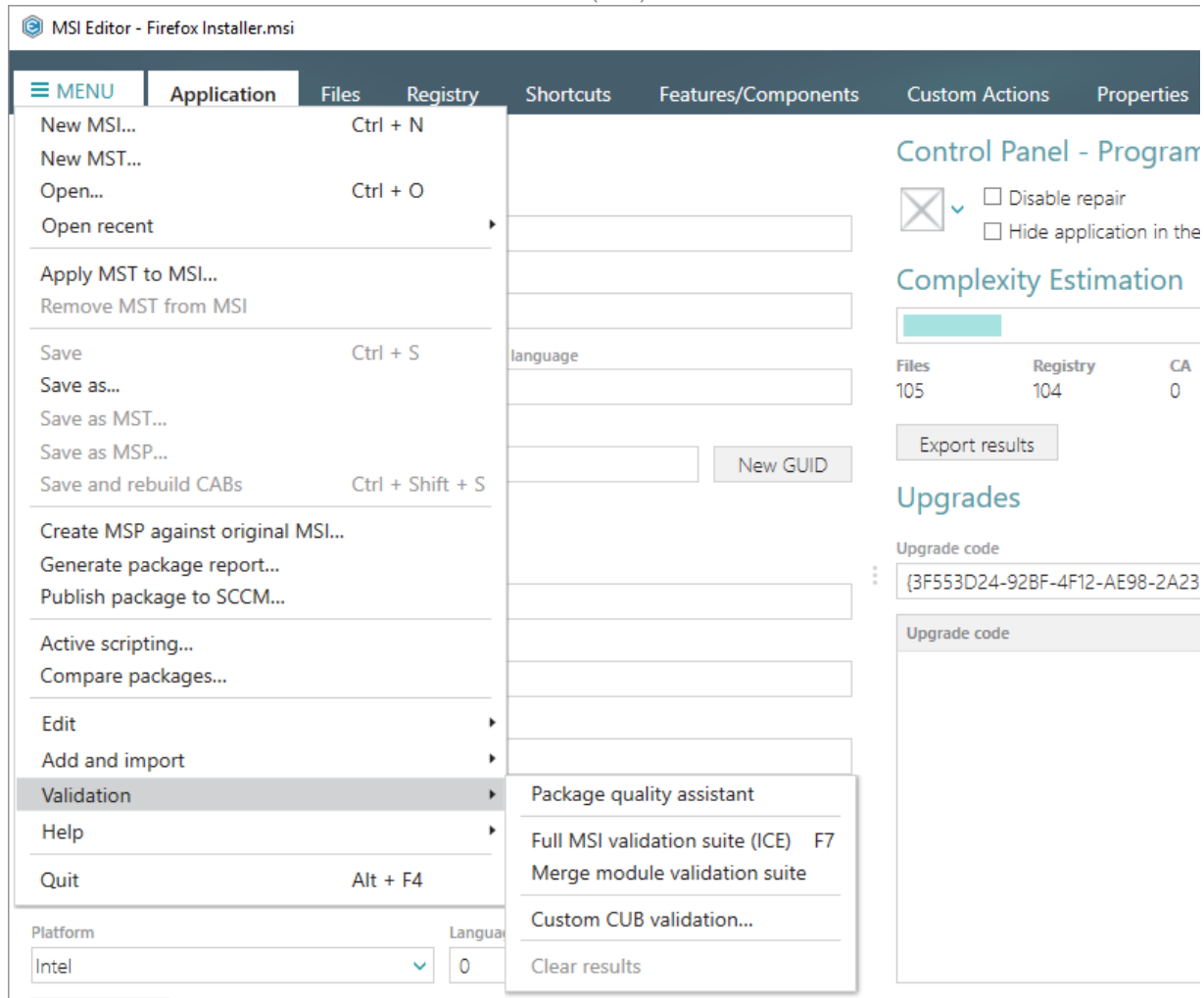
[2]. Select Open... from MENU.



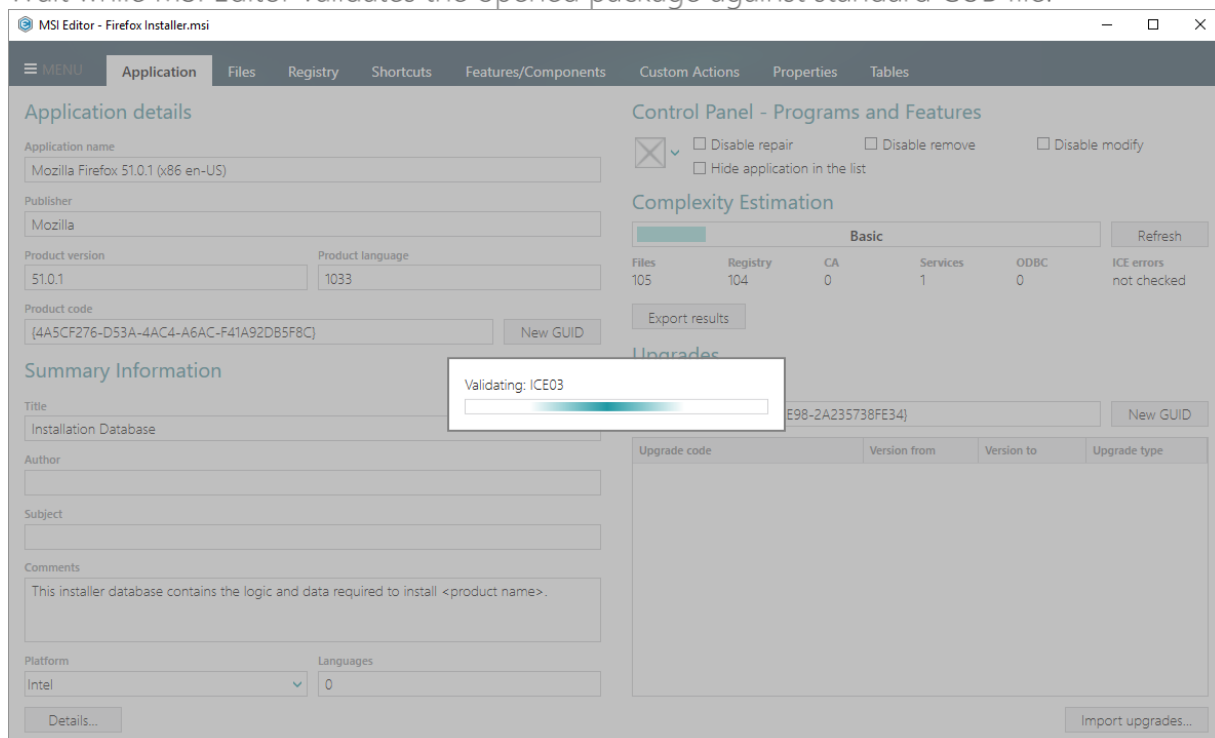
[3]. Choose an MSI package, which you want to validate against the standard CUB files and click Open.



- [4]. Select Validation -> Full MSI validation suite (ICE) from MENU.



- [5]. Wait while MSI Editor validates the opened package against standard CUB file.



[6]. The validation results will be displayed on the Tables -> ICE validation tab.

MSI Editor - Firefox Installer.msi

MENU Application Files Registry Shortcuts Features/Components Custom Actions Properties **Tables**

Tables

Table	Number	Name	Type
_Required	4	Description	7679
_Validation	10	Description	7679
AdminExecuteSeque...	3	Sequence	5378
AdvExecuteSeque...	3	Sequence	5378
Appld	7	RunAsInteractiveUser	5378
AppSearch	2	Signature_	11592
Billboard	4	Ordering	5378
Binary	2	Data	2304
Class	13	Attributes	5378
Component	6	KeyPath	7496
Condition	3	Condition	7679
Control	12	Help	7986
ControlCondition	4	Condition	11775
ControlEvent	6	Ordering	5378

☒ Hide empty tables ☒ Enable linked items tracking for delete/update operations Selected rows: 0 / Total rows: 55

Row references ICE validation Undo/Redo history

ID	Type	Description	Table	Column	Key	F
ICE003	Warning	String overflow (greater than length permitted in column); Table: ServiceInstall, Column: Description, Key(s): MozillaM...	ServiceInstall	Description	MozillaMaintenance	C
ICE333	Warning	Reg key registry_shtml is used in an unsupported way. ProgId should be registered via the ProgId table. This entry...	Registry	Registry	registry_shtml	C
ICE333	Warning	Reg key registry_FirefoxHTML is used in an unsupported way. ProgId should be registered via the ProgId table. This...	Registry	Registry	registry_FirefoxHTML	C
ICE333	Warning	Reg key registry_FirefoxURL is used in an unsupported way. ProgId should be registered via the ProgId table. This en...	Registry	Registry	registry_FirefoxURL	C
ICE333	Warning	Reg key registry_DefaultIcon1 is used in an unsupported way. ProgId - Icon associations should be registered via the...	Registry	Registry	registry_DefaultIcon1	C
ICE333	Warning	Reg key registry_DefaultIcon2 is used in an unsupported way. ProgId - Icon associations should be registered via the...	Registry	Registry	registry_DefaultIcon2	C
ICE333	Warning	Reg key registry_shell is used in an unsupported way. Shell extension verbs info should be registered via the Verb tab...	Registry	Registry	registry_shell	C
ICE333	Warning	Reg key registry_shell1 is used in an unsupported way. Shell extension verbs info should be registered via the Verb ta...	Registry	Registry	registry_shell1	C

3.13 Calculate Package Complexity

[1]. Launch MSI Editor from the desktop or the start menu shortcut.

PACE Suite
New

Docu Generator
New

MSI Editor
New

MSI Generator
New

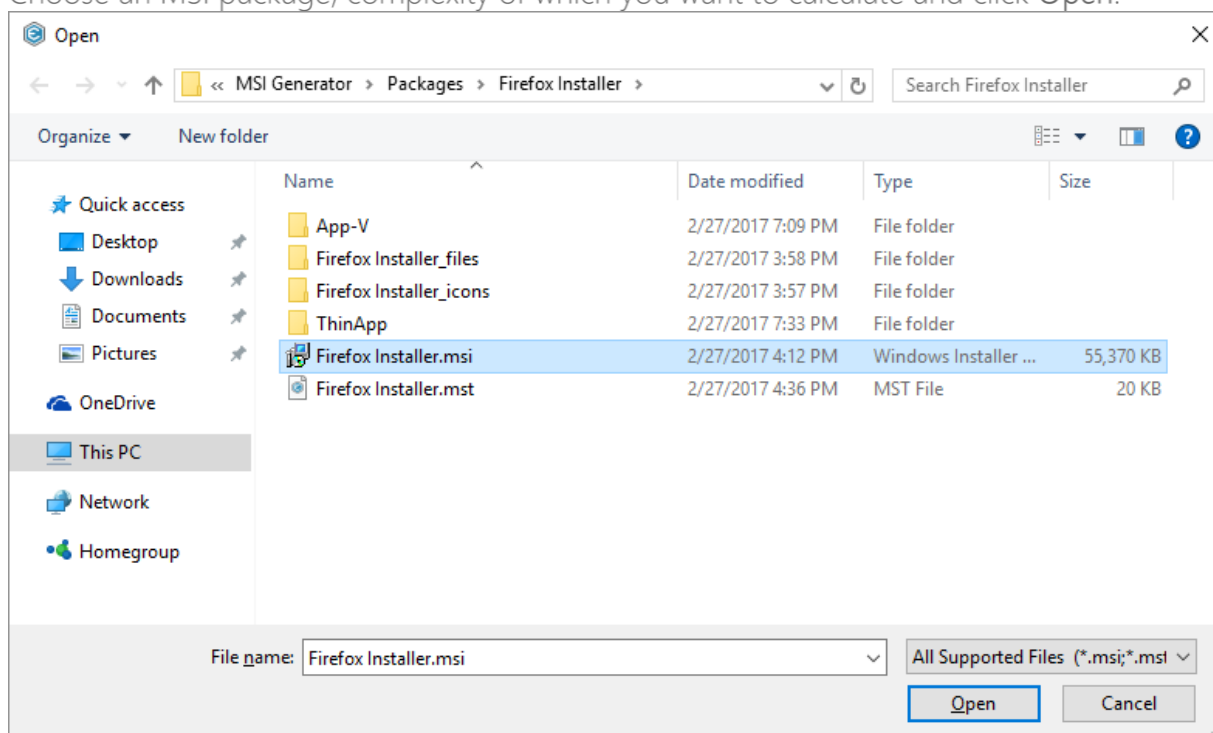
Release Notes
New

User Manual
New

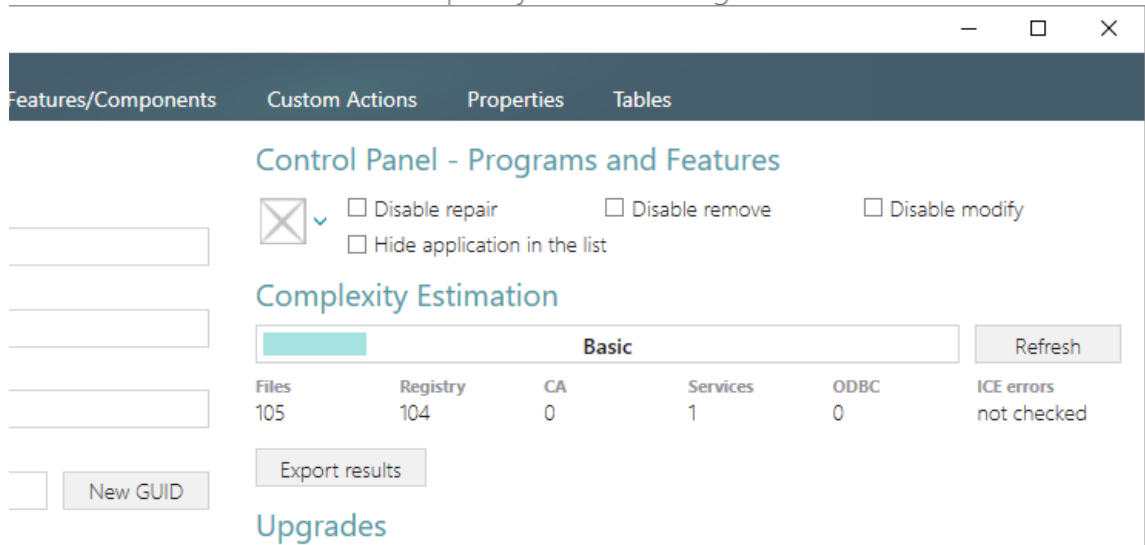
[2]. Select Open... from MENU.



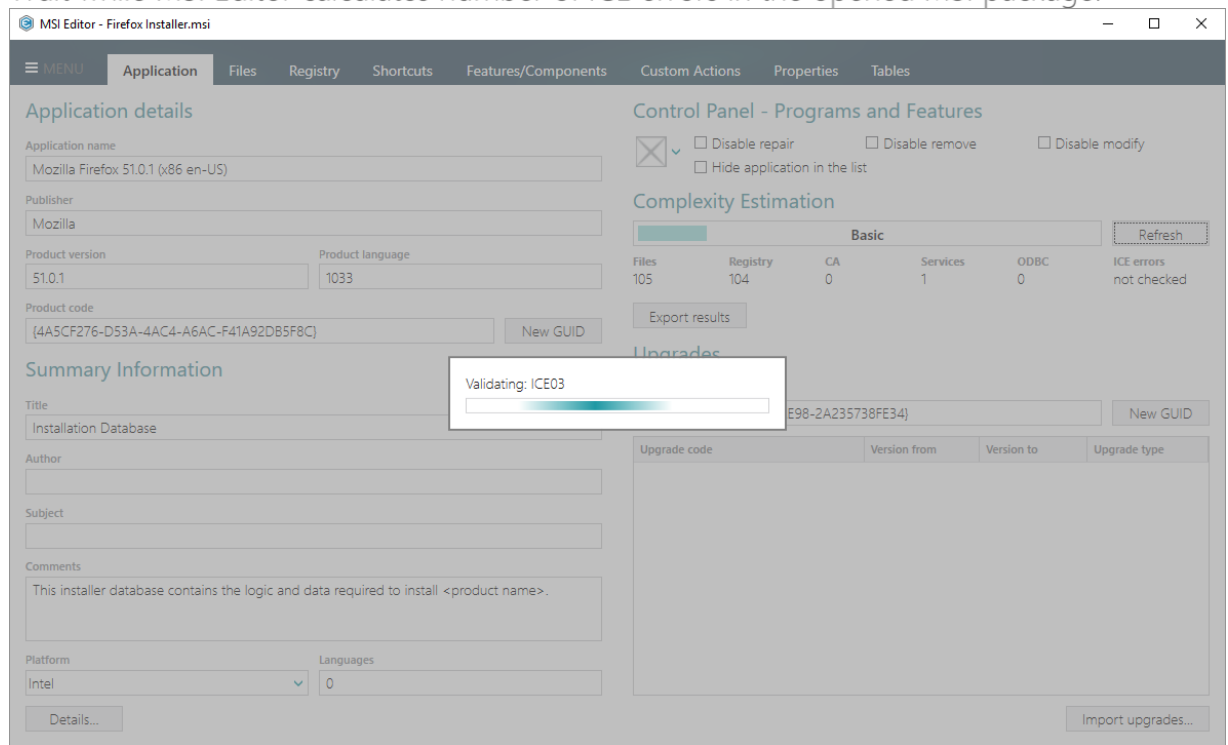
[3]. Choose an MSI package, complexity of which you want to calculate and click Open.



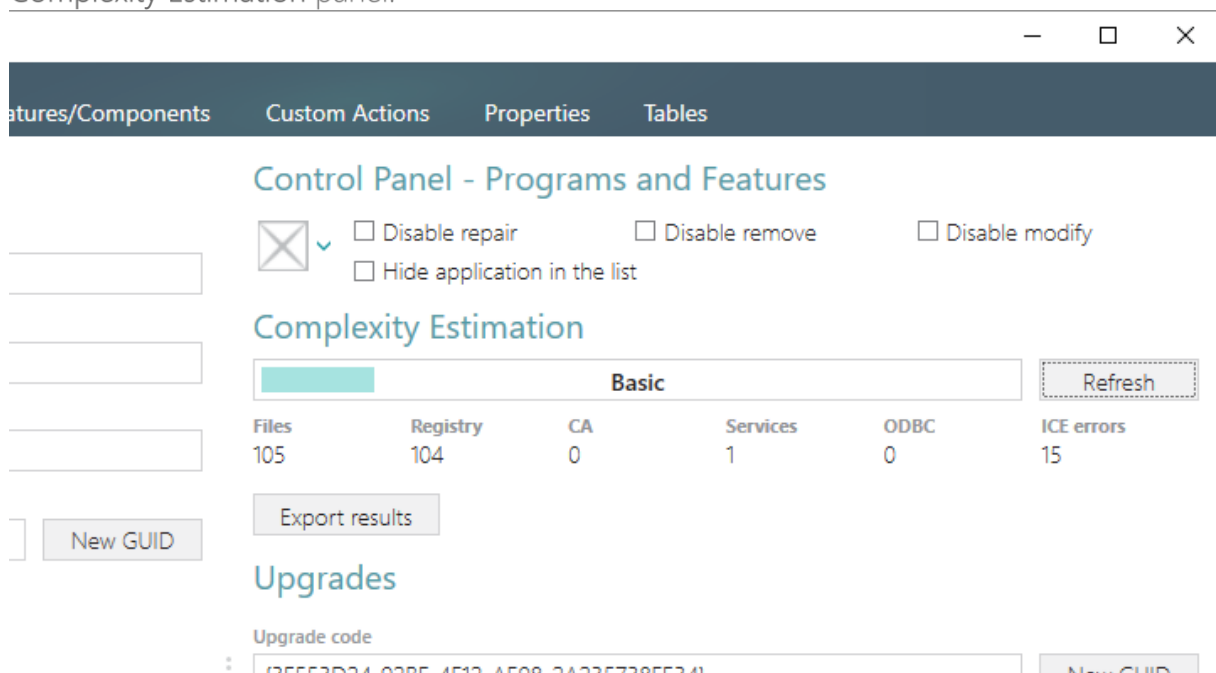
[4]. Click Refresh to re-calculate complexity level including ICE validation errors.



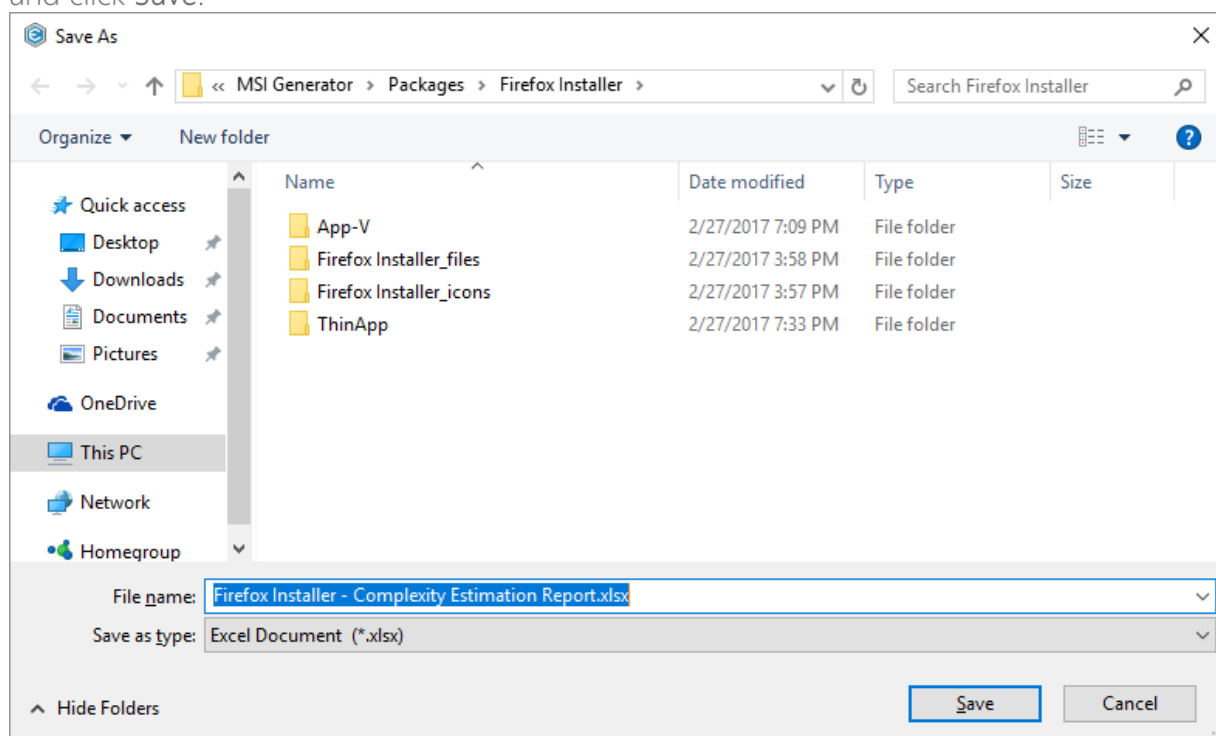
[5]. Wait while MSI Editor calculates number of ICE errors in the opened MSI package.



- [6]. In order to export complexity estimation results to the XLSX file, click **Export results** at the Complexity Estimation panel.



- [7]. Specify a name and a destination location of the exported complexity estimation results and click **Save**.

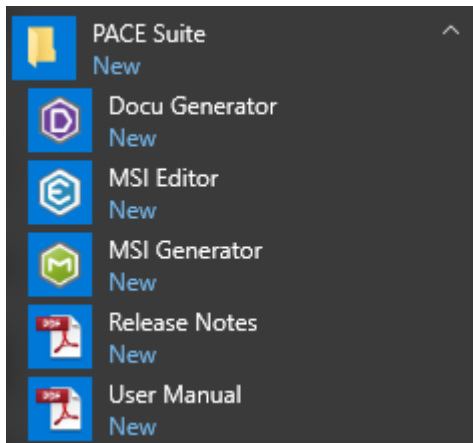


3.14 Create Discovery Documentation

Record all your on-screen actions into a nice looking document with screenshots and annotations. Such document could contain installation and configuration instructions and the like.

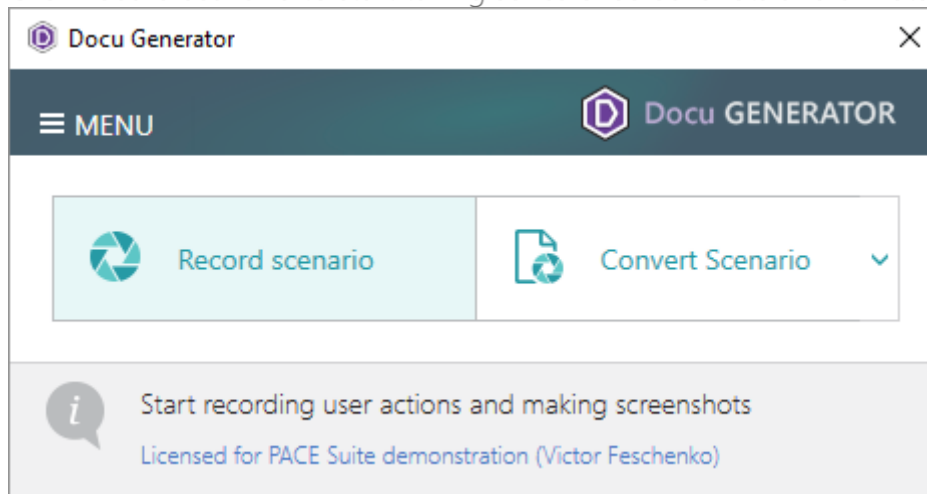
NOTE In order to take screenshots of application, which is launched with elevated permissions, launch Docu Generator with elevated permissions as well.

- [1]. Launch Docu Generator.



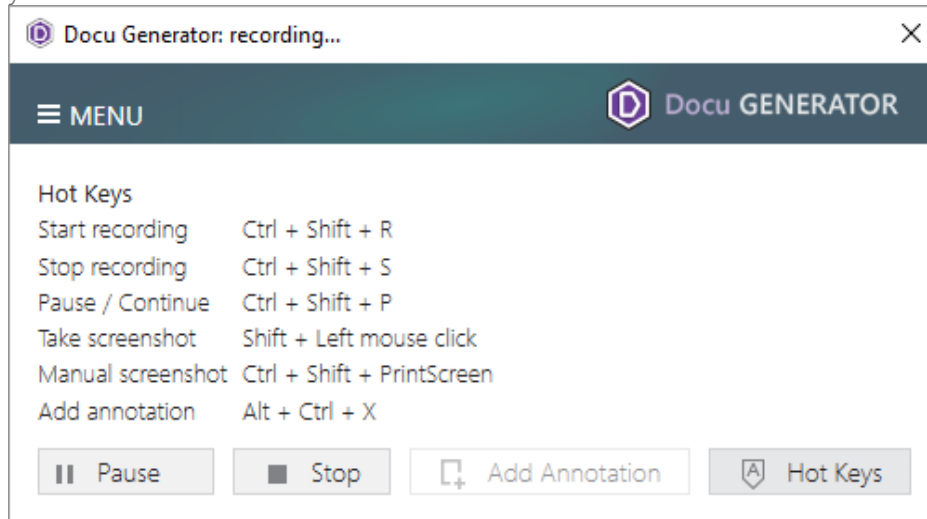
In order to launch Docu Generator with elevated permissions, press Shift and select Run as administrator from the context menu of the Docu Generator's shortcut.

- [2]. Click Record scenario to start taking series of screenshots and annotations.

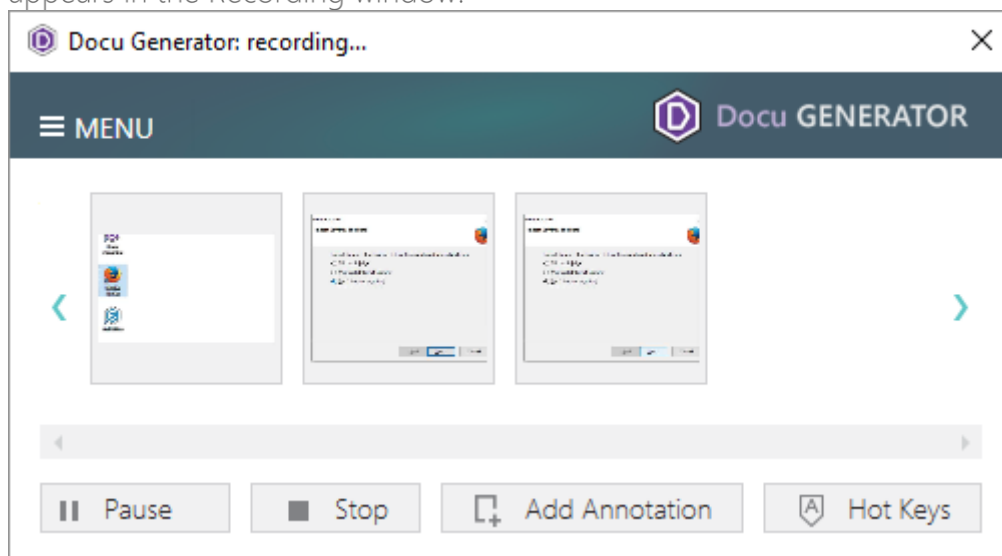


- [3]. Hover your mouse pointer on the Hot Keys button to check which of hot keys are used to take screenshots. Press the Shift key + Left mouse click to take a screenshot of an active window, dialog or screen area. Press Ctrl + Shift + PrintScreen, then click and drag the mouse pointer to select a rectangular area you want to grab. A screenshot is done when

you release the mouse button.

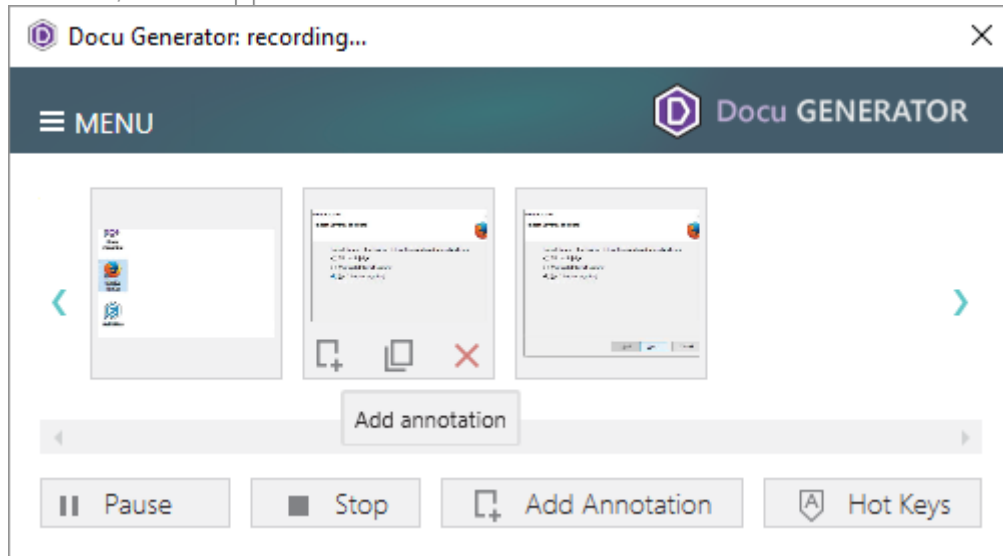


- [4]. Now, do the actions you want to record into the document. Launch executables, go through dialogs, select options and enter values just telling Docu Generator when to take another screenshot, as described above. A preview of each new screenshot immediately appears in the Recording window.

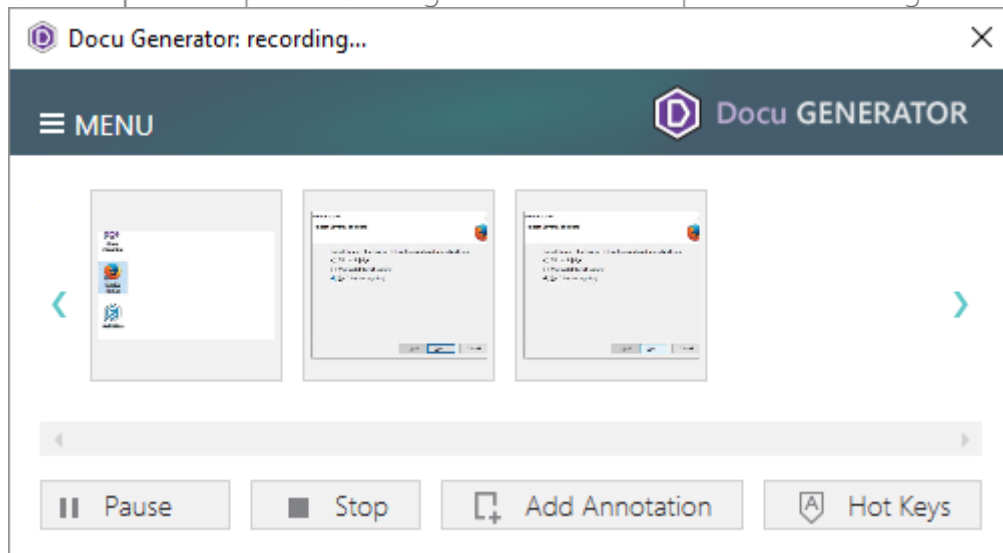


- [5]. In order to Add annotation, Copy to clipboard or Remove a screenshot, hover mouse pointer on a preview of the screenshot in the Recording window and select the respective


function, in the appeared bottom bar.



- [6]. Click Stop to complete recording the scenario and proceed to saving results.



- [7]. Select an output format of the document, saving options and click Save to create document. A Template is an optional field, described below.

 **Docu Generator: Save Results**

×

Save as

☒ Word Document

☐ MHT/HTML File

☐ Docu Generator Scenario

Template

▼

Go to...

Options

☒ Save user actions ?

☒ Show started application info ?

☒ Show mouse position ?

☒ Show content of edited fields ?

Save

Cancel

Find options description below in table.

Option	Description
Save user actions	This option adds the information about names of controls (which were clicked on) and names of the captured windows and dialog boxes to the document.
Show mouse position	This option adds information about mouse pointer position and highlights it with a red circle on screenshots to the document.
Show started application info	This option adds information about paths and command line arguments of the launched application to the document.
Show contents of edited fields	This option adds contents of input fields of the captured windows and dialog boxes to the document.
Template	<p>Docu Generator supports Microsoft Word (DOT/DOTX) and HTML/MHT templates to be used for document creation. To use a template, specify its file path in the "Save Results" window.</p> <p>In order to mark a position where screenshots and comments are to be placed to, add the following textual placeholder into a template:</p> <p>[SCR]</p> <p>You can specify placeholder [SCR] in the existing table in a template. In this case, the placeholder points to a cell where screenshots should start, while a column to the right of it will be populated with comments.</p> <p>If the placeholder is located outside a table, then a new table for screenshots and comments will be created. A Docu Generator-default table style will be used.</p> <p>If a placeholder is not found, screenshots and comments will be appended to the end of the template. You will be warned about this in the Save Results window</p>

NOTE To let you return to your scenario later, Docu Generator always creates DSCN file along with the output file in an output folder.

NOTE If Microsoft Word is unavailable on the machine, the option of saving DOC file is inactive, but you still can save a DSCN file and convert it on a machine with MS Office installed later.

pg. 315

4 References

4.1 More Information and Contact

Product website | <http://pacesuite.com>

Support email | pace-support@infopulse.com

Support Portal | <http://pacesuite.com/support>

Educational videos | [YouTube channel](#)

4.2 PACE Suite in Social and Professional Networks



| itninja.com/pace



| [@pacesuite](https://twitter.com/pacesuite)



| fb.com/pacesuite



| <https://www.linkedin.com/groups/PACE-Suite-APS-community-4765703>